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DESIGN BOOK.

[V.2]

Course of Study WEAVING & DESIGNING. — 2nd Year.

Name Miss. Vivian Stancer.

B 954—200

COLOUR LECTURE.

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Colour Lecture No. 1.

Lecturer. — Prof. Barker

Sept. 27. '12

The Analysis of Coloured Fabrics.

Coloured fabrics should be studied from the following points of view:—

(1.) The Tone.

This study comprises (a), the form in which the colours (really the light + shade) are arranged; (b), the relative intensities of each part of the form, or, in other words, the distribution of light + shade, to show the form to the greatest advantage.

(2.) The Colours.

These may be classified in 4 divisions, namely

(a), Compositions in 2 colours,
(b), Compositions in 3 colours,
(c), Compound + Complex Compositions.
+ (d), Shaded Compositions.

Lecture 1. — (Cont.)

Study of Patterns.

The Scotch tartans illustrate in a very interesting manner what occurs in the designing of every colour pattern, however simple.

EXAMPLE I.

The tartans of King Edward VII + the Prince of Wales, in the form are the same, but the positions of the colours are changed (Red to green + green to red)

EXAMPLE II

That tartan known as the Hunting Macpherson has been formed in 3 stages :—

(a.) Squares of dark blue + red on a black background
(b.) Changing the background to form a check in mid-grey.
(c.) Changing of the size of the large ground check to introduce an interesting difference.

EXAMPLE III

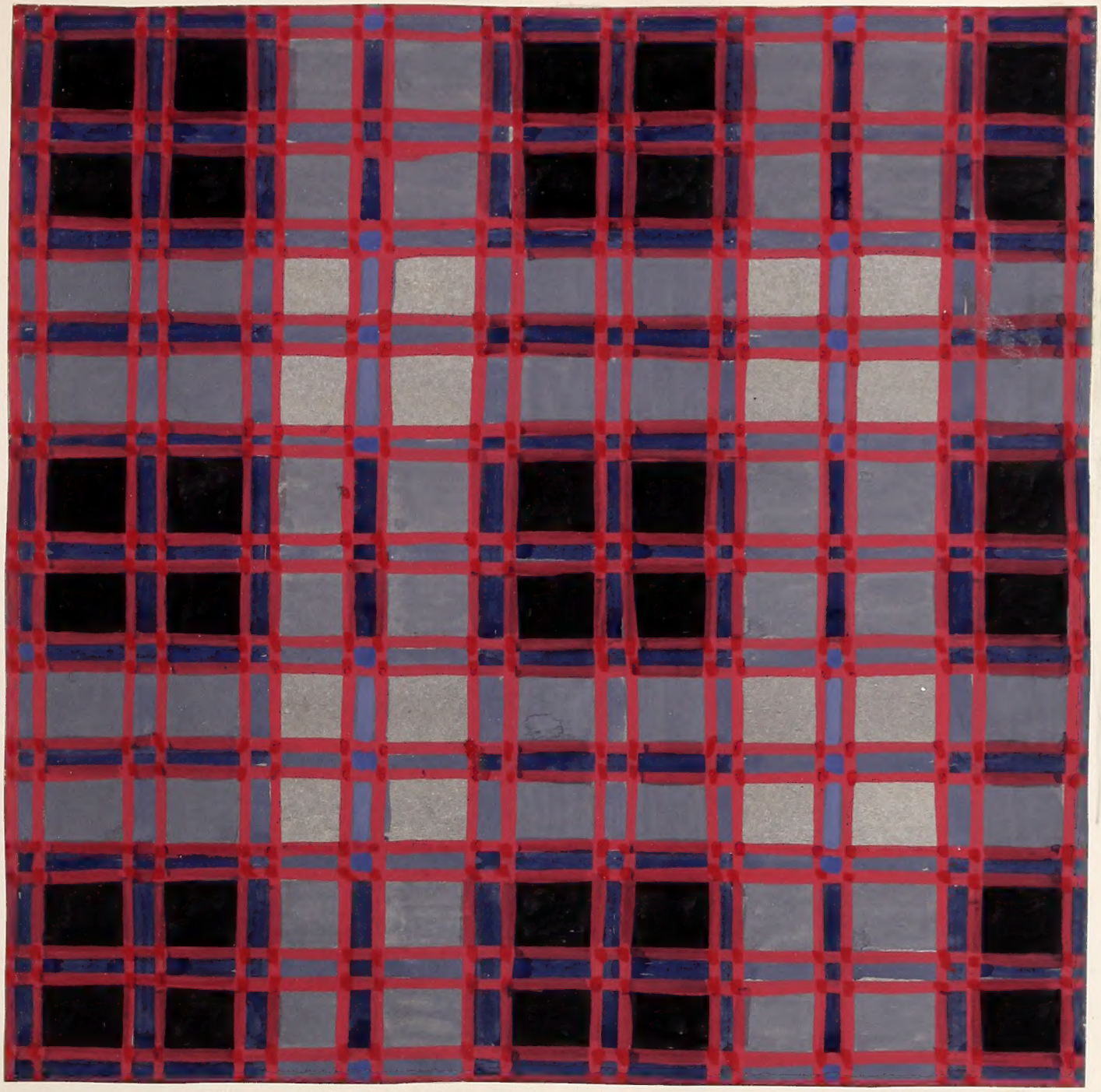
Tartan XX12 has probably been formed in 4 stages. viz :—

(a.) Simple black + white check — equal quantities.
(b.) Changing of several rods. — black to white in 2 lines.
(c.) Addition of over-checking of yellow on the dark check.
(d) Changing of dark lines on white to red (Purple)

The analysis of 3 patterns (including Examples II + III) will be found on the accompanying mounting sheets.

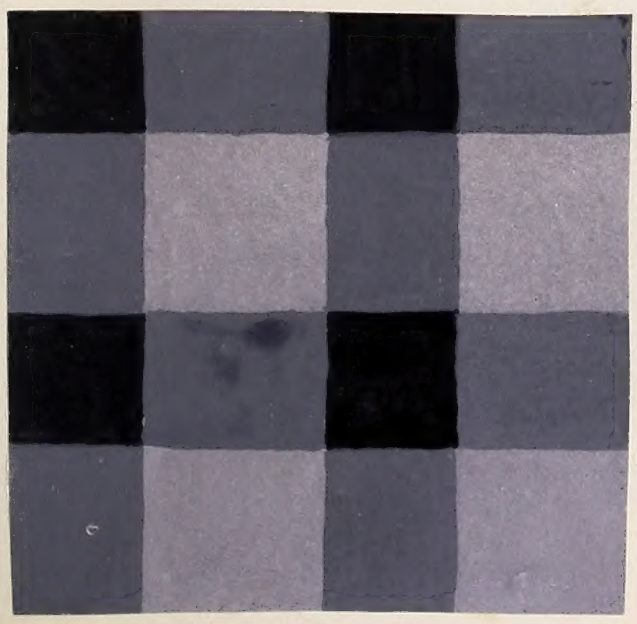
4th STAGE.

Sect
No
1.

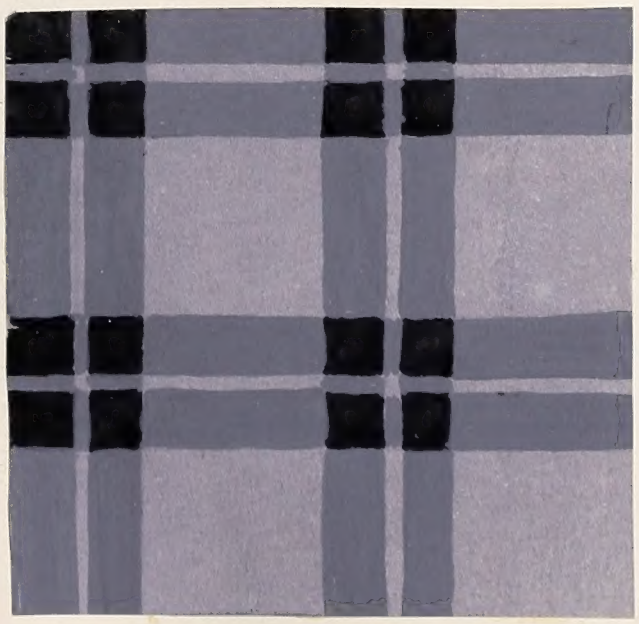


TARTAN I.- "HUNTING MACPHERSON."

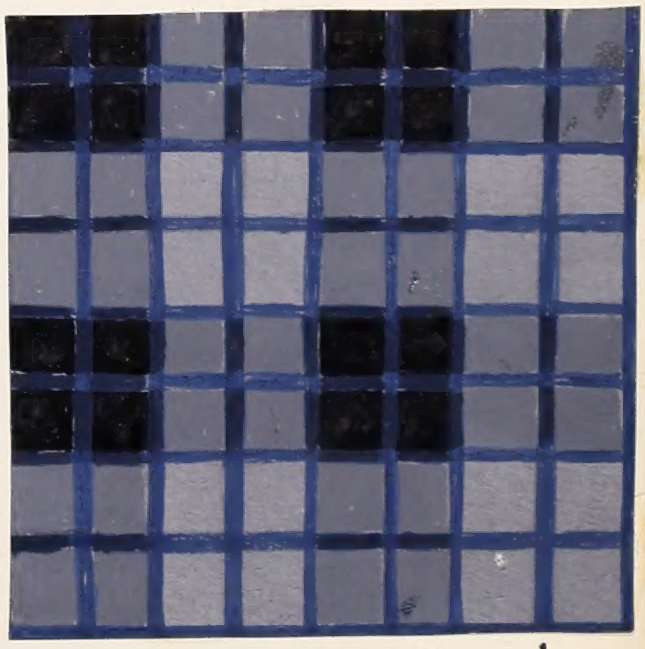
IN 4 STAGES.



STAGE I.



STAGE II.



STAGE III.

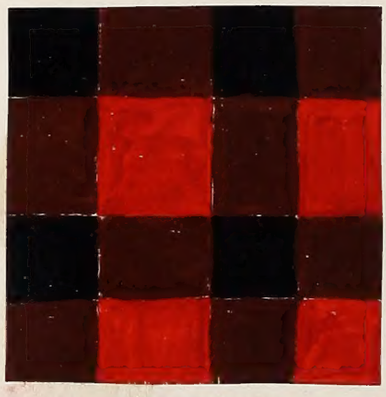
Lect. 1.

STAGE 3.

TARTAN 2.– "MACDUFF."

IN 3 STAGES.

STAGE I.



STAGE II.

Lecture II. Oct 11 - '12

Synthesis.

Stripes + Checks (Black + White)

(1) Equal Quantities.

Below is given a list of 4 equal stripes, built up on systematic lines, + illustrated on a mounting sheet along with the result of applying the quantities in the form of checks.

	1.	2.	3.	4.	
Black —	1/2"	1/4"	1/8"	1/16"	→
White —	1/2"	1/4"	1/8"	1/16"	→

(2) Unequal Quantities

List "B" will also be found worked out in stripe + check form.

		1.	2.	3.	4.	5.	
"A"	Black —	1"	1/2"	(1/4" EQUAL)	1/8"	1/16"	→
	White —	1/16"	1/2"		1/2"	1"	←
"B"	Black —	3/4"	3/8"	3/16"	3/32		→
	White —	1/16"	1/8"	1/4"	1/2"		←

P.T.O.

Lect. 2 (Cont.)

Stripes & Checks. (Black, White + Grey.)

Equal Quantities

	1.	2.	3.	4.	
Black –	1/2"	1/4"	1/8"	1/16"	→
White –	1/2"	1/4"	1/8"	1/16"	→
Grey –	1/2"	1/4"	1/8"	1/16"	→

Unequal Quantities.

	1.	2.	3.	4.	5.	
Black. –	1"	1/2"	1/4"	1/8"	1/16"	→
(a) White. –	1/8	1/16"	(1/32") 1"	(1/64") 1/2"	(1/128") 1/4"	→ →
Grey. –	1/16	1/8"	1/4"	1/2"	1"	←

In this range the White could, with consistency, run from the 1/8", to 1/128" in the 5th pattern, but as the idea is to have a fixed size of (~~[illegible]~~) stripe (1/16, 1/8, 1/4, 1/2 or 1") in all cases, it is evident that the white should start from 1" in patt. 3, descending through patts. 4, 5, 1 + 2 to 1/16".

	1.	2.	3.	4.	5.	
Black –	1"	1"	1"	1"	1"	
(b) White –	1"	1/2"	1/4"	1/8"	1/16	→
Grey –	1/16"	1/8"	1/4"	1/2"	1"	←

Here Black is constant (1") whilst White + Grey run in reverse directions from 1" – 1/16" + 1/16" to 1".

	1	2	3	4	5	
Blk. –	1/16"	1/8"	1/4"	1/2"	1"	←
(c) White. –	1/16"	1/8"	1/4"	1/2"	1"	←
Grey. –	1"	1/2"	1/4"	1/8"	1/16	→

Here Blk. + White are the same in all cases, with Grey running in the reverse direction.

P.T.O.

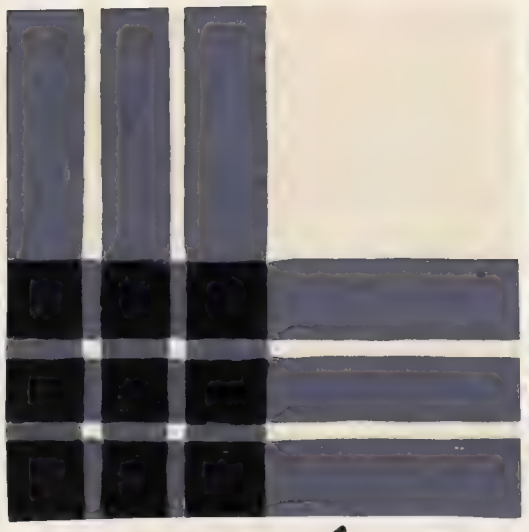
Sect 1.

4th Stage.

Tartan 3. "Dress Macpherson."

"XX12".

Stage I.



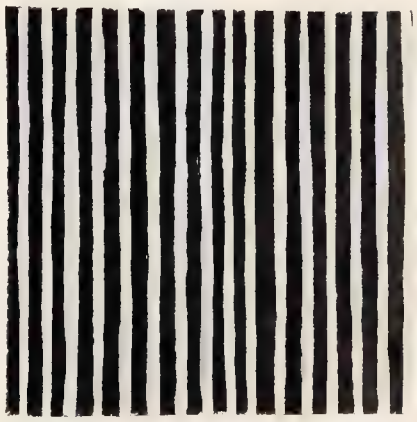
STAGE II.

Stage III.

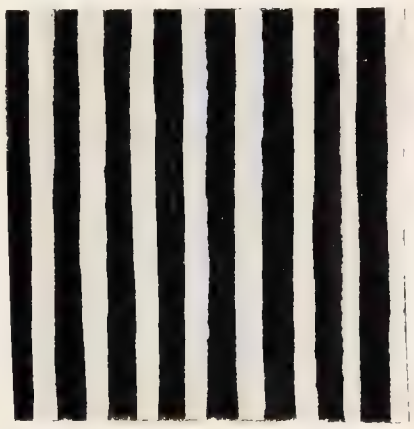
Stripes and Checks. Equal Quantities.

Black + White.

Stripe Form.



1/16" Bk. + Wh.

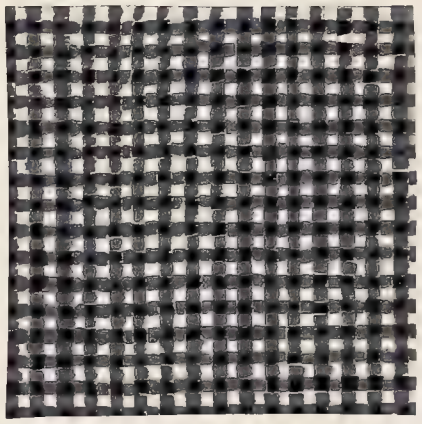


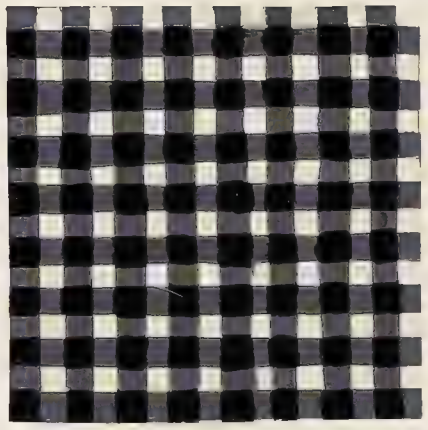
1/8" Bk. + Wh.

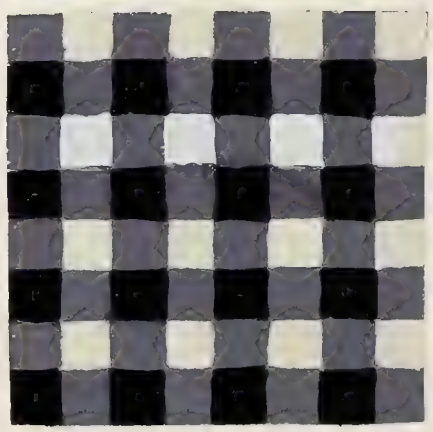
1/4" Bk. + Wh.

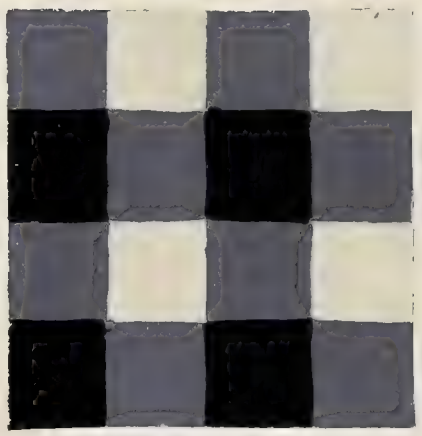
1/2" Bk. + Wh.

Check Form.









Lecture 2. (Cont.) Oct. 11.

Stripes & Checks. (Cont)

Black - White - Grey. Unequal Quantities

	1.	2.	3.	4.	5.	
Black -	1/16"	1/8"	1/4"	1/2	1"	←
White -	1"	1/16"	1/8"	1/4"	1/2"	←
Grey -	1/4"	1/8"	1/16"	1"	1/2"	→

(d) Ox-5 Pat.

Here B. W & G. start from 1/16" but moved one on each time, & having the Grey running in the reverse direction.

Compound Stripes & Checks.

There are here 2 types :-
"A"x Compound in form, &
"B"x Compound in light & shade.

"A"x Compound in form

		1.	2.	3.	4.
("A")	Black -	1/2" } 2	1/4" } 2	1/4" } 2	1/8" } 6
	White -	1/2" }	1/4" }	1/8" }	1/16" }
("B")	Black -	1/4" } 4	1/8" } 4	1/8" } 2	1/16" } 4
	White -	1/4" }	1/8" }	1/4" }	1/8" }

(1.) (2)

These examples 1, 2 3 & 4 are on the same plan or basis, but regarding the effects as simple stripe effects of A & B; Nos 1, 2 & 3, are equal quantity stripes while 4 is an unequal quantity stripe.

Division "Bx" overleaf.

Lect. 2 (Cont) **Stripes + Checks (Cont.)**

"Bx – Compound in Light + Shade.

These may be divided into 4 classes:—

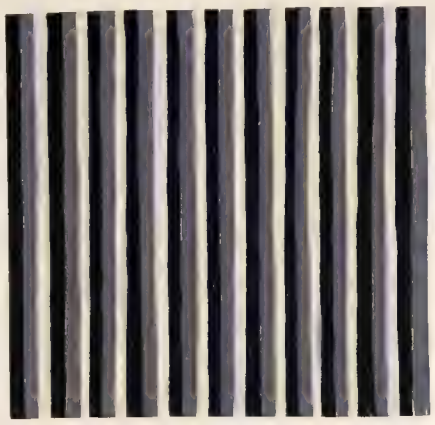
1.		2.		3.	
Black – $\frac{1}{2}$" } 2 White – $\frac{1}{16}$" } or 3	(2)	Blk. – $\frac{1}{16}$" } 2 Wh. – $\frac{1}{2}$" } or 3		Blk. – $\frac{1}{16}$" } 3 Grey – $\frac{1}{2}$" }	
Black – $\frac{1}{2}$" } 1 Grey – $\frac{1}{8}$" } or 3	(1)	Grey – $\frac{1}{8}$" } 1 Wh. – $\frac{1}{2}$" } or 3		Grey – $\frac{1}{16}$ } 3 Wh. – $\frac{1}{2}$ }	

It will be noticed that there is least of the contrasting colour to the ground shade. Take I for example – here black is the ground ($\frac{1}{2}+\frac{1}{2}$) + so we only get $\frac{1}{16}$" of white – the most contrasting colour.

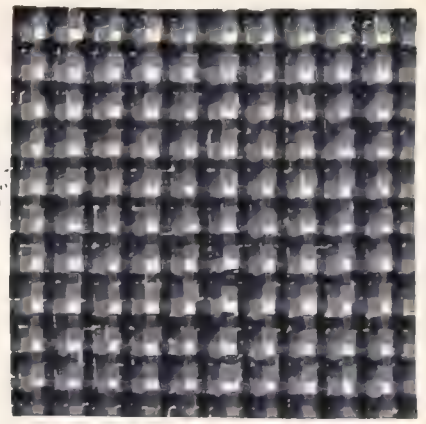
4.
(Complex Effects.)

A.				B.	
4.	$\frac{1}{16}$"	— Black —	$\frac{1}{16}$"	} 8.	
	$\frac{1}{16}$"	— White —	$\frac{1}{8}$"		
2.	$\frac{1}{8}$"	— Black —	$\frac{1}{8}$"	} 6.	
	$\frac{1}{8}$"	— Grey —	$\frac{1}{4}$"		
1.	$\frac{1}{4}$"	— White —	$\frac{1}{4}$"	} 4.	
	$\frac{1}{4}$"	— Grey —	$\frac{1}{2}$"		

Lecture 2.



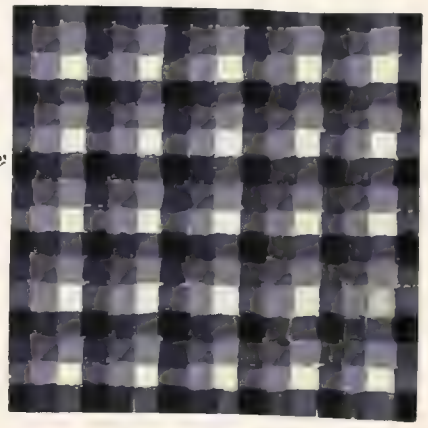
1/16"



1/16"

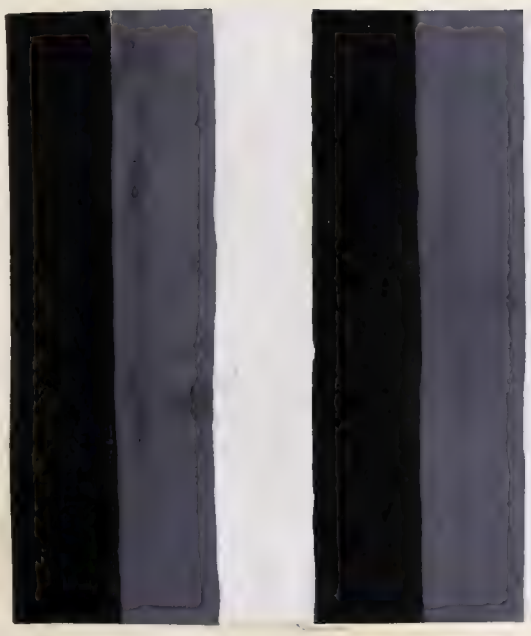
Equal Quantity Stripes & Checks in Black, White & Grey.

1/8"



1/8"

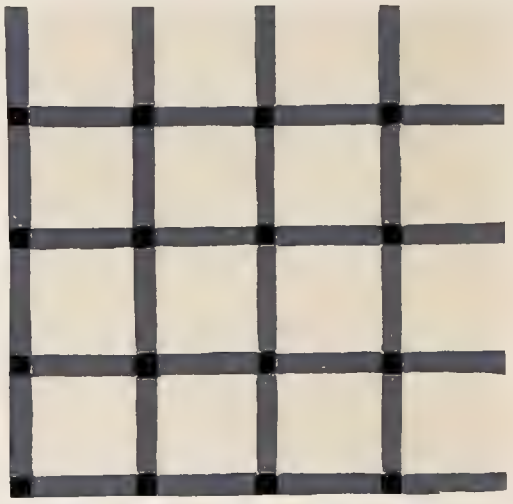
1/4"



1/2"

Lecture 2.

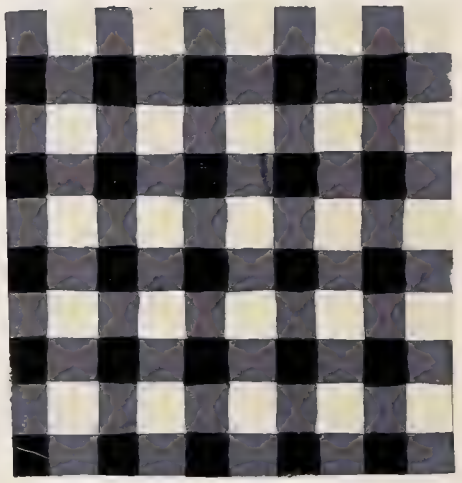
(1.)



(1)

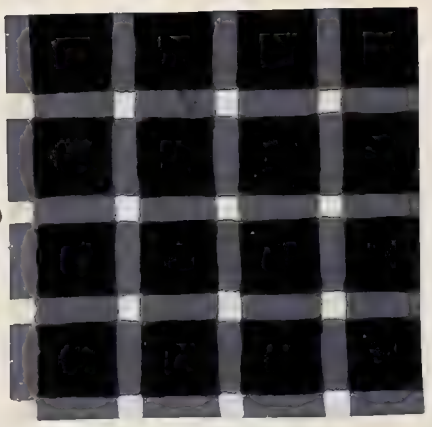
Irregular Quantity Stripes & Checks in Black & White.

(2.)



(2)

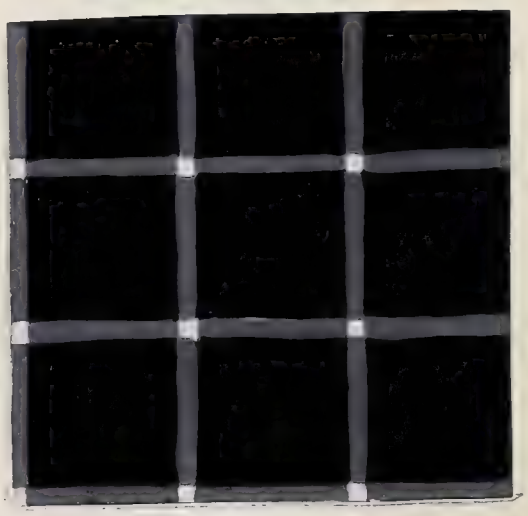
(3.)



(3)

(4.)

List "B".



(4)

Lect. 3 # Study of Colour & Weave Effects. Oct. 18.

A pattern of a colour + weave effect is shown on a mounting-sheet; it is a popular type — vertical hair-line style.

Definition.

A small effect in 2 or more colours, produced by weave + colour in combination; but is in appearance, quite different from either weave or colour. The following examples show the value of systematic work + the method of finding new combinations. By this kind of work also, the value of changing the footing of the weave is demonstrated.

Exercise I. (Weave = $\frac{1}{1}$ or plain wv.) (1st footing)

Colour		1.		2.		3.		4.	
WARP	1 dark	1 light	1 dk	1 lt.	lt.	1 dk	lt.	1 dk.
WEFT	1 dk.	1 lt.	1 lt.	1 dk.	lt.	1 dk	1 dk.	1 lt.

Exercise II. ($\frac{1}{1}$ wv.) (2nd footing)

Colour		5.		6.		7.		8.
WARP	1 d	1 l	1 d.	1 l	l.	1 d	l.	1 d
WEFT	1 d.	1 l	1 l.	1 d	l.	1 d	1 d.	1 l

These 2 lists illustrate the principals which must be applied to illustrate every possible effect from a given weave & given order of warping + wefting.

The list overleaf (of which a print is shown on mounting-sheet) includes the best known in styles — easily recognisable from the illustration.

Lect 3 (Cont.)

Colour + Weave Effects (Cont.)

List of C. + W. effects. (see print)

Colouring - Warp + Weft.

1 dark – 1 light
2 d. – 1 l.
1 d. – 2 l.
3 d. – 1 l.
2 d. – 2 l.
3 d. – 3 l.
4 d. – 4 l.
4 d. – 4 l.
6 d. – 2 l.

Weaves applied.

$\frac{1}{1}$ (PLAIN), $\frac{2}{1}$, $\frac{3}{1}$,
$\frac{2}{2}$, $\frac{3}{3}$, $\frac{4}{2}$,
$\frac{4}{4}$, $\frac{6}{2}$. (ALL TWILLS.)

Another method of origination.

(? = doubt to pronce good effect.)

See examples worked out – 18 of them, further on in book

Colouring →	1 dark – 1 light.	2 d. – 2 C.	4 d. – 4 l.
Weaves	$\frac{1}{1}$ (plain)	$\frac{1}{1}$	$\frac{1}{1}$ (?)
	$\frac{2}{1}$ (twill)	$\frac{2}{1}$	$\frac{2}{1}$ (?)
	$\frac{2}{2}$	$\frac{2}{2}$ (gives broken hairline)	$\frac{2}{2}$ (Shepherd's Plaid)
	$\frac{3}{3}$ (?)	$\frac{3}{3}$	$\frac{3}{3}$
	Twill Hopsack.	T. H.	T. H.
	Mayo Twill.	M. T.	M. T.

From these examples it will be noted that there are 5 relationships of colouring + weave, viz :-

(1) Perfect coincidence between colour + weave.

Example. Colour = 1d. 1l., Weave = $\frac{1}{1}$ (plain). Both colour + weave repeat on 2 thds.

Cont. on next page →

Section II.

1.

2.

3.

4.

Unequal Stripes & Checks in Black, Grey & White — List "A"

5.

5 Checked.

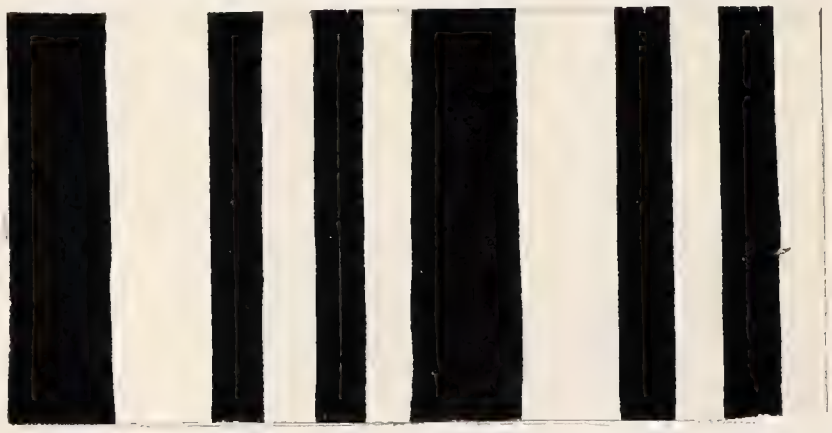
Lecture 20.

Compound Stripes & Checks.

"Ax" = Compound in Form.

"Bx" = Compound in Light + Shade.

"Ax"



Stripe.

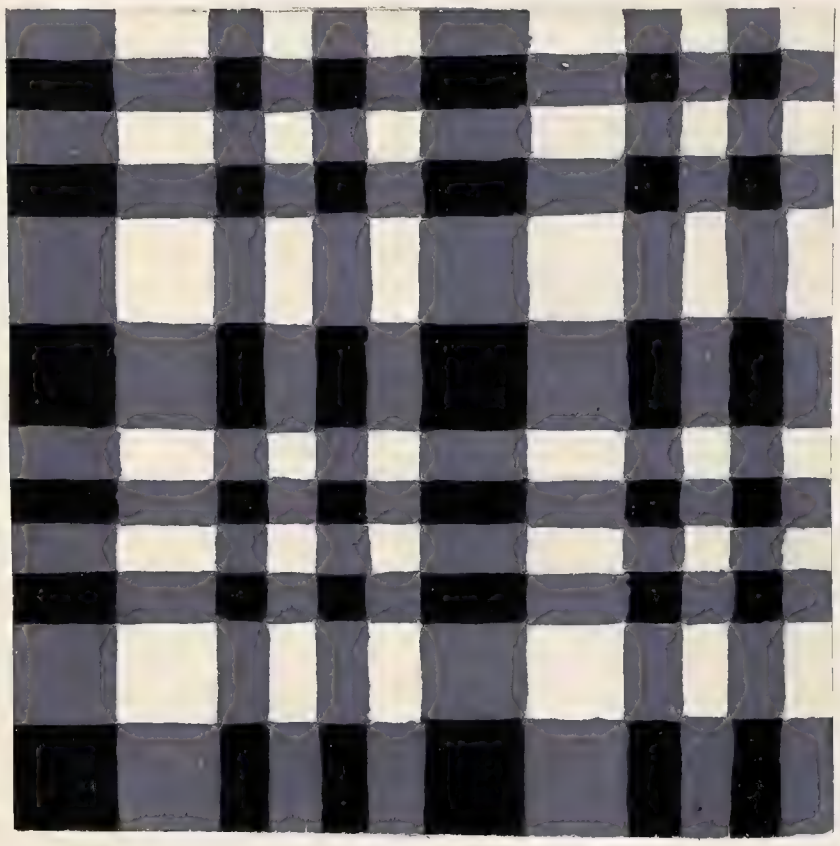
Black & White.

"Bx"

Stripe.

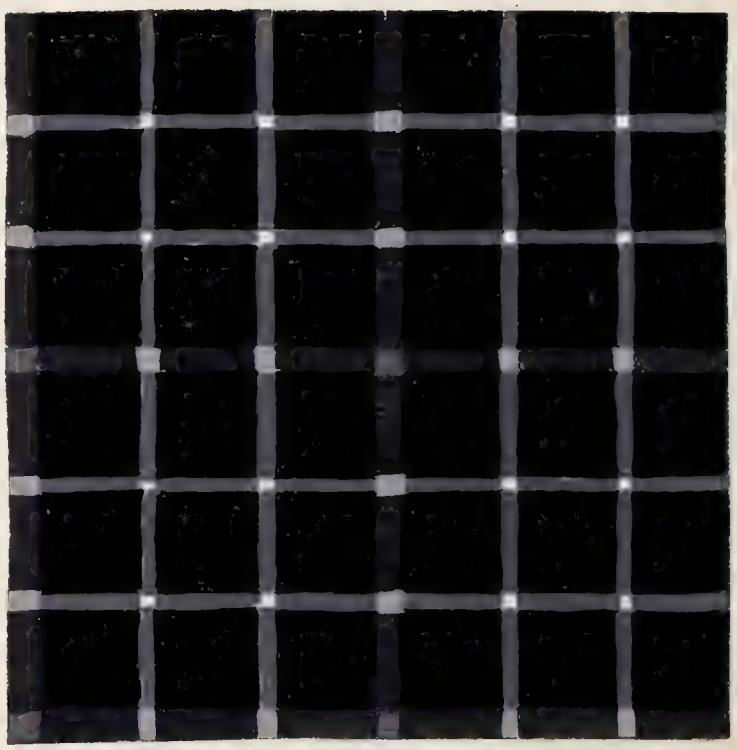
Black, White & Grey.

Check.



"Ax"

Check.



"Bx"

Sect. 3 (Cont.) Colour + Weave Effects (Cont.)

(2.) The colouring a measure of the weave.
Ex. Colour = 1d.-1e. (on 2 thds.) + Weave 2/2 twill (on 4 thds)
(3.) The weave a measure of the colouring.
Ex. Colour = 4d. 4l. (on 8 thds) + Weave 2/2 (on 4 thds.)
(4.) In which Colouring + Weave have measure in common
(a) In which colouring is less than weave.
(b) In which colouring is greater than weave.
(5.) In which there is no measure common to either colour or weave.

Lecture 4. Oct. 25.

It was found that it is easier, in originating colour + weave effects, to take a simple weave + apply to it different orders of colouring, than to take a certain colouring as a base + alter the weave. In following out this principle a novel plain-weave, or plaited, effect was obtained from the following particulars. (see mounted examples.)

Warp + Weft colour plan - 2 dark . 1 light. Weave = plain.

The Formation of Hair Lines. These may be formed of equal or unequal stripes on a well recognized basis or principle:—

For lines to run in Warp direction, each colour of warp must be covered by the same colour of weft, when weaving "down".

For Weft direction, each colour of weft must, when down, be

covered by warp of the same colour.

Exercise.

Make sketch of 3 colour hair line in plan-form, in (a) warp direction + (b.) Weft direction.

For lines in direction of warp, particulars =

(a.) Wp. + Wf. { 1 brown, 1 red, 1 blue } applied to 2/1 warp twill.

For weft lines, partic's. =

(b.) Wp. + Wf. { 1 brown, 1 red, 1 blue } applied to 2/1 weft twill.

See mounting sheet for example worked out.

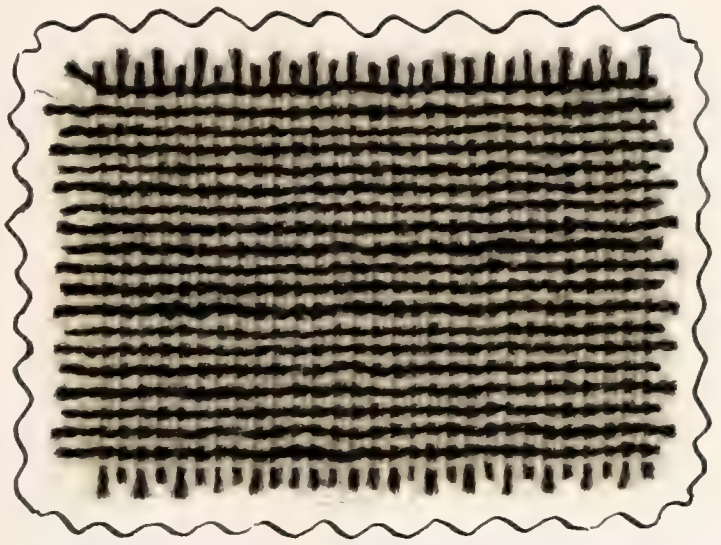
List of Simple Hairlines.

Colours	a.	b.	c.	d.	e.	f.	g.	h.	i.
Black	1	2	1	2	1	1	3		2
White	1	2	1	1	2	1	1	3	1
Lt. Grey			1			1		1	1
Dk. Grey						1			
Weave.	1/1	2/2 Hopsack	2/1 twill.	2/1	2/1	3/1	Twill or Herd Sateen.		

Example "f" will be found worked out on a mounting sheet.
The effect of a pick missing in this design gives a broken effect of the lines, as also happens when the twill is reversed + the order of colour left as before.
These effects occasioned by weaving mistakes are also illustrated on a mounting sheet.

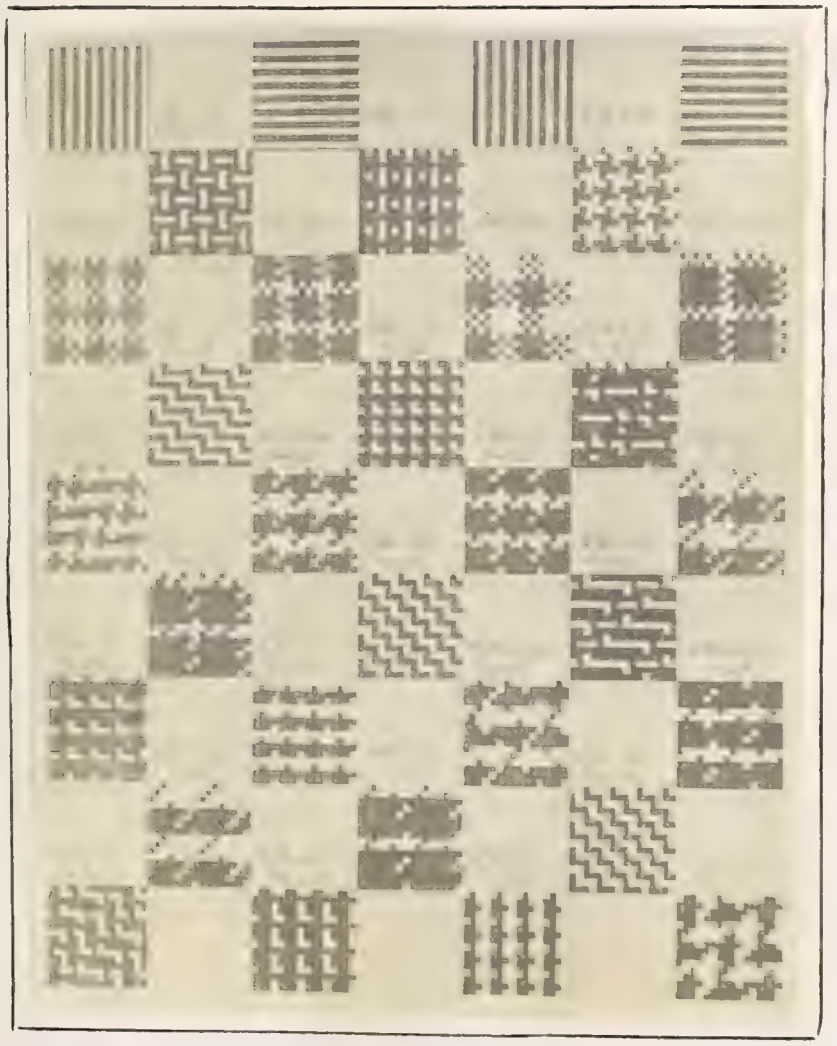
P.T.O.

A Colour & Weave Style.



Horizontal Hair-line

Colour and Weave Effects.

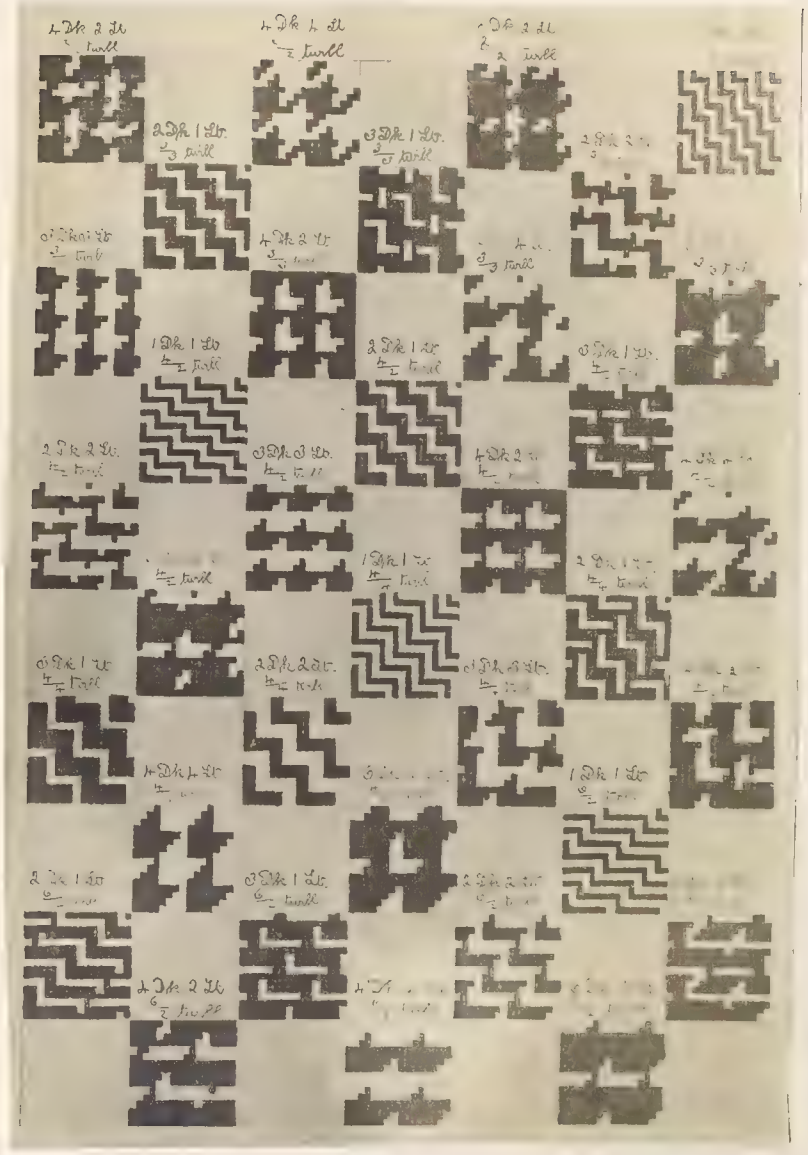


See Lecture No. 3.

Sect. 3.

Colour & Weave Effects.

See list in Notes.



Lect. 4 (Cont.)

List of possible 5 colour (maximum) hair-line Styles.

	1.	2.	3.	4.	5.	6.
Black.	1	2	3	4	2	3
White.	1	1	1	1	2	2
Lt. Grey.	1	1	1		1	
Dk. Grey	1	1				
Red.	1				*	

Style 5 (*) will be found worked out by means of 5-end warp sateen weave & this colour plan :-

Warp. { 2 black, 2 white, 1 Lt. Grey }

Weft. { 1 black, 1 white, 1 Lt. grey, 1 black, 1 white }

Change of Footing.

This is responsible when applied either to the colour or to the weave for the production of new effects.
In this example 4 effects are got by changing the footing of the colour plan.

2/2 twill Style.

	a.	b.	c.	d.
Warp	4 dk. 4 Lt.	4 d 4 l	4 l 4 d	4 l 4 d
Weft	4 d. 4 l.	4 l 4 d	4 l 4 d	4 d 4 l

If the weave footing be changed, the effects are :—

Warp = 4 d. 4 l
Weft = 4 d. 4 l

e. 2/2 f. 1 1 / 2 g. 2 2 / 2 h. 2 / 1 1 .

see mounting sheet for examples e. f. g. h.

Lecture 6. Oct. 31 '12.

Method of Analising Colour + Weave effects.

This should be done in stages as follows :- (see mounting sheet.)

(1) Make a rough sketch of the effect on paper, noting any features which will help one in transferring the drawing on to point-paper (e.g. usually the thinnest line given in the effect will represent 1 thd. or 1 pk.)

(2) Transfer the rough sketch to point-paper.

(3) Indicate alongside the point-paper plan, the most likely order of warping + wefting

(4.) When light picks enter the cloth, indicate on the pt. paper plan by a dot (⊡) where warp <u>must</u> come up, + when dark picks enter the cloth, indicate by (⊡) dot, where warp <u>must</u> come up.

(5.) When light threads enter the cloth indicate by a dash (⊟) where weft <u>must</u> come up, + when dark thds enter the cloth indicate by (⊟) dash, where weft <u>must</u> come up.

(6.) Paint out in red* all dashes (leaving dots strictly white + blank) to give the necessary design for producing the effect (marks = weft). The blanks, where either weft or warp can be up with no alteration in the effect, can be filled in with red* (this sometimes gives a design which weaves better, — often because long floats are eliminated) or not, at the will of the designer — see next stage.

(7.) Further develop by weft marks, those sections of the effect which, so far, have no marks on, + may be either warp or weft, + thus complete the weave effect required.

See mounting sheet for stages worked out.

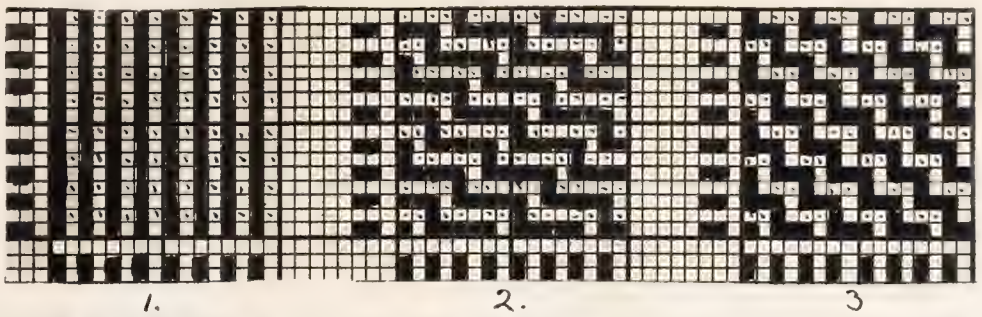
---

* <u>Black</u> in the case of the examples, as the <u>effect</u> is given in red.

LECTURE 3.

1/1 — PLAIN. 2/1 TWILL. 3/2 TWILL.

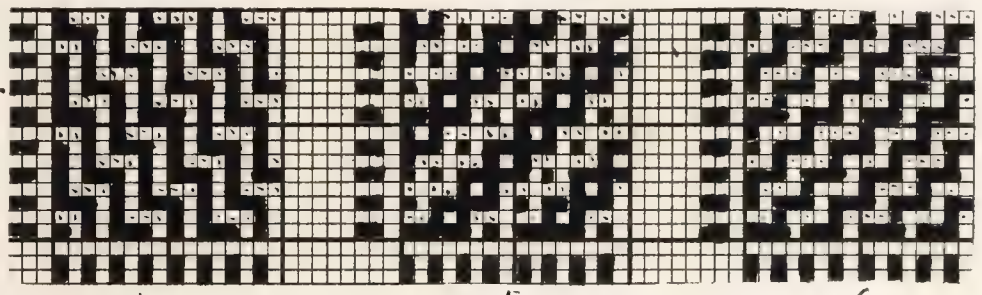
WARP.



1. 2. 3

WEFT.

1 THD. DARK
+
1 THD. WGHT.

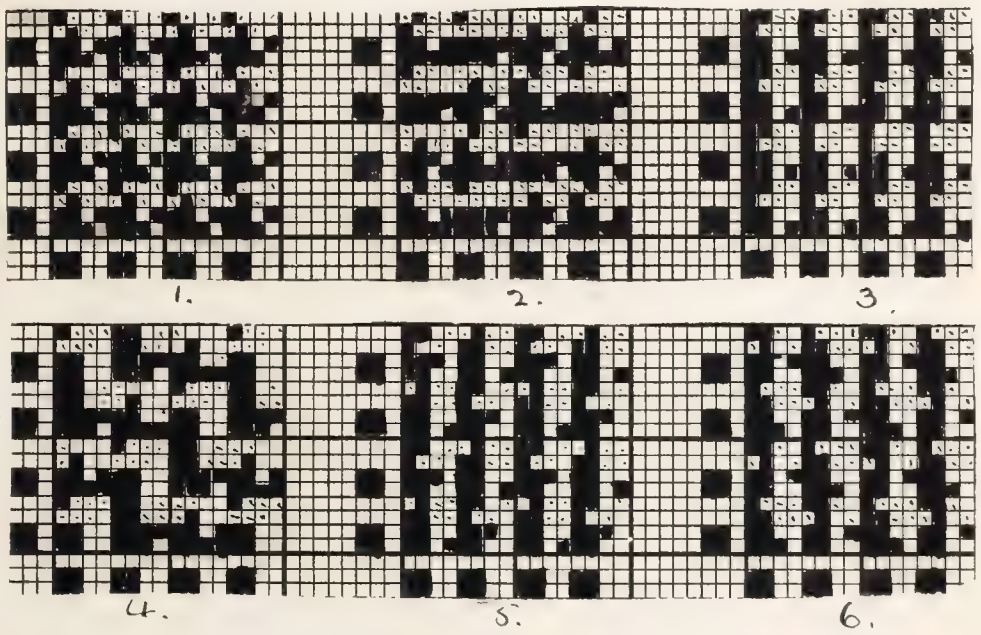


4. 5. 6.

1 pk. DK.
+
1 pk. LT.

18 COLOUR

2 THDS. DK.
+
2 THDS. LT.

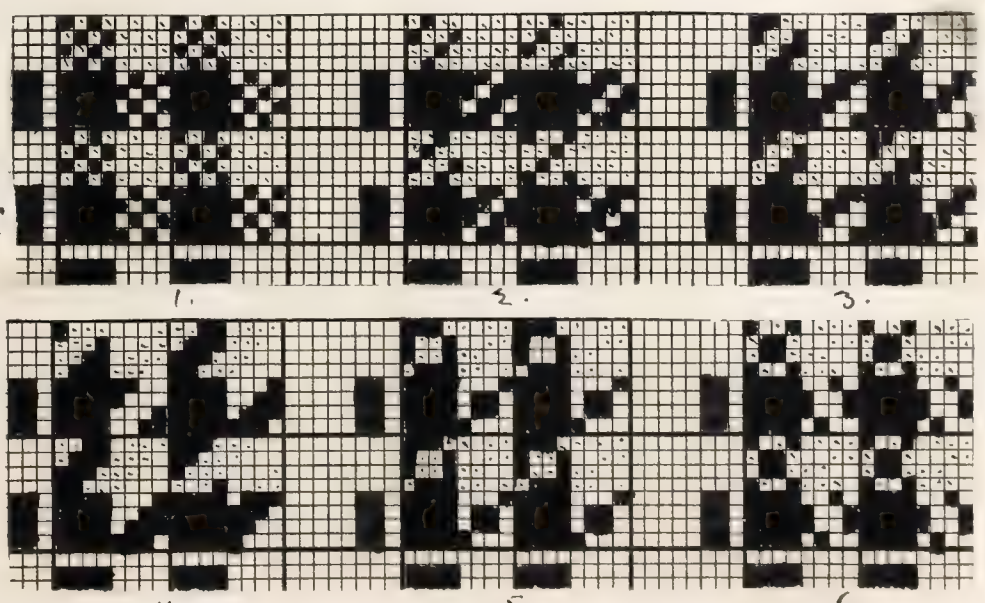


1. 2. 3.
4. 5. 6.

2 pks. DK.
+
2 pks. LT.

WEAVE EFFECTS.

4 THDS. DK.
+
4 THDS. LT.



1. 2. 3.
4. 5. 6.

4 PKS. DK.
+
4 pks. LT.

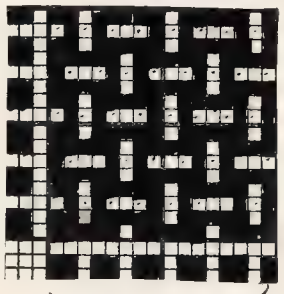
3/3 4/4 TWILL. TWILL HOPSACK. MAYO TWILL.

Lecture 4.

"Interlacing" Effect.

Refer to Notes.

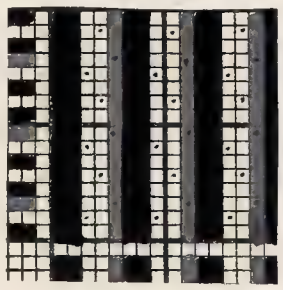
3 - colours.



Heft
2 dk.
1 lt.

Plain Wv.

Wp. = 2 dk - 1 lt.

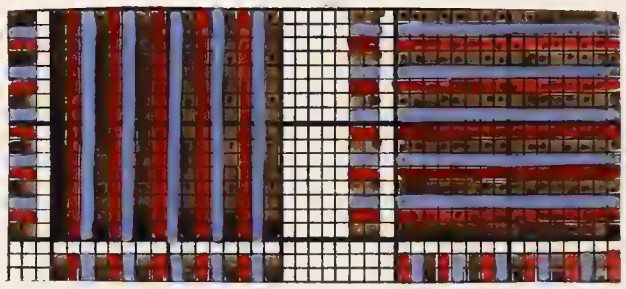


5 end Hard Sateen.

Style 5.

3 - colour Hair-line.

Vertical



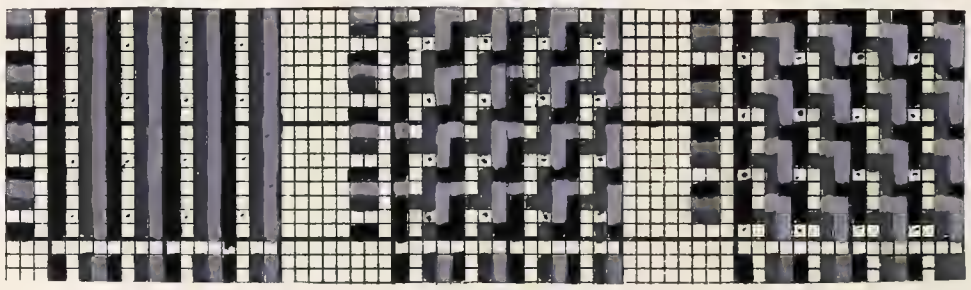
Horizontal.

2/1 Wp. Twill.

2/1 Wf. Twill.

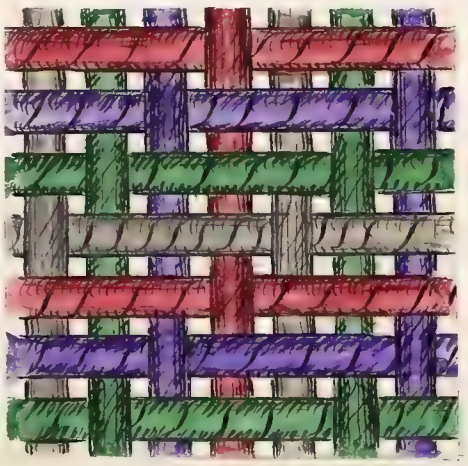
4 - colour Hair-line.

Ordinary, with usual 3/1 Twill (up).



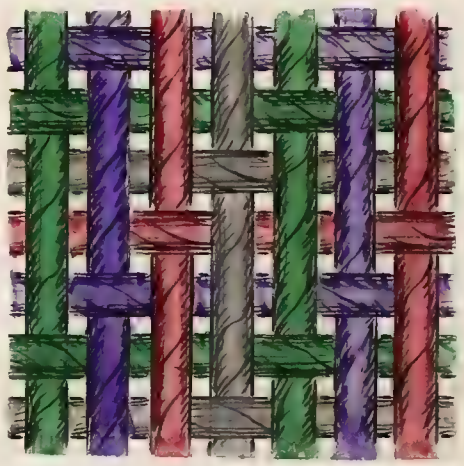
Effect of Miss-pick.

Effect when twill reversed.



Horizontal.

Diagram of 4 - colour Hair - line.



Vertical.

Lecture 7. Designing Effects to Scale. Nov 8th '1

There are here two considerations :-

(1) The actual scale in which a pattern or design appears.

(2) The scale in which it is convenient (or possible) to design the effect on paper.

(1) The Actual Scale.

If the set is given in Ths. per 1", a scale is very apparent.

Example I.

Warp. 1 Thd. Blk. = 1/48" } 1/24" = Pattern Repeat.
1 Thd. White = 1/48" }

12's reed 4's.

Example II.

Warp. 4 black = 1/24" } 1/8" = Pattern Repeat.
8 white = 1/12" }

16's reed 6's

NOTE. There are really 3 questions in this case
set fixed + the no. of Ths changing?
no. of Ths fixed + the set changing?
the set + the no. of Ths fixed + the weave changing?

1st What is the scale with the
2nd What is the Scale with the
3rd What is the Scale with

The scale in which it is advisable to work, on paper, will often be greater than the actual scale. In the following examples, N°3 is too fine to be worked to the actual scale, but may be worked out double size, + then looked at through a piece-glass suitably held to effect the desired reduction.

Example III.

Weft + Warp { 1 Blk = 1/64" } 1/32" Pattern Repeat.
1 Wh. = 1/64" }

16's reed 4's.

Plain Weave
giving Hair line
64 pks per 1".

Example IV.

Wp + Wf. { 2 Bk = 1/16" } 1/8" Patt. Rept.
2 Wh = 1/16" }

16's reed 2's

1/2 Twill.
giving a broken
hairline

Example V.

Wp. + Wf. { 3 Bk. = 1/16" } 3/8" = Pattern Repeat.
3 Wh. = 1/16"
6 Bk. = 1/8"
6 Wh. = 1/8" }

24's reed 2's
Weft as warps
3/3 Twill.

P.T.O.

Lect. 7 (cont.) Designing Effects to Scale (Cont)

Analysis of Scales. The scale in which a pattern is designed may be easily found by actual measurement. It is very desirable, however, for the designer to exercise himself in scale discrimination.

LECTURE 8. Theme of Grey in Textiles. Nov. 22nd 1912.

Artists give the name grey to all neutral shades (such as blue-grey, red-grey, green-grey etc.) but the expression here may be taken to refer to combinations of Black + White. There are innumerable shades of grey, a graded series being obtained by taking some black dyed top, + white top or sliver + mixing them as follows (with hand-cards for small experimental lots.)

(1.)

Black	1	2	3	4		1	1	1	1
White	1	1	1	1		1	2	3	4

a

a = mid. grey.

A better series of Grey shades with a more varied gradation, is as follows:-

(2.)

Black	15	7	3	1	1	1	1
White	1	1	1	1	3	7	15

Note the difference by comparison, between a mixture (Blk. + Wh.) grey + a dyed grey. The former (sometimes called an Oxford grey) is, in appearance, a hard sort of tint, but the dyed grey appears soft.

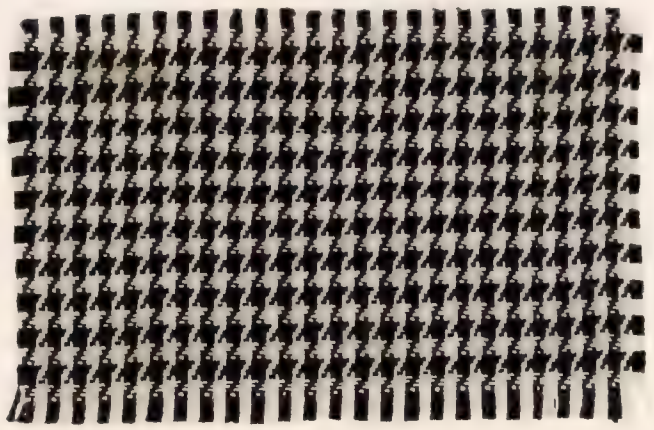
Grey may be employed with Black + White in two manners, 1st for a distinct effect or tone, 2nd. for a shaded effect to employ with black in its dark shades, + white in its light shades.

P.T.O.

Section 4.

Colour & Weave Pattern.

Commonly known as



"The Shepherd's Plaid."

Colour & Weave for Above.

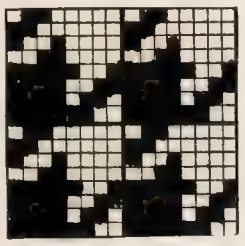
Colouring = 4 dark, 4 light for both Wp. & Wf.

Weave = 2/2 Twill, on this footing.

Examples illustrating how different Colour & Weave Effects are got by changing the Weave Footing.

4 effects from different footings of 2/2 Twill.

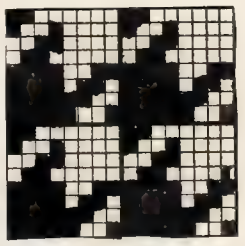
1.



Example "E."

1.

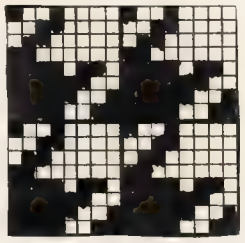
2.



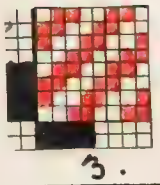
Example "F."

2.

3.

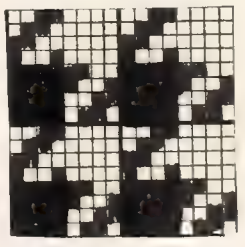


Example "G."



3.

4.



Example "H."

4.

Duplicated

Coloured.

Lecture 6.

Method of Analysing Colour & Weave Effects.

Stage I.

Rough Sketch.

Stage II.

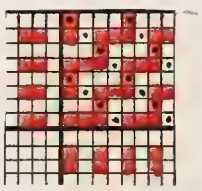
Sketch transferred on to Point-Paper.

Stage III.

Wefting Plan.

Warping Plan.

Stage 4.



Dots = Warp up.

Stage 5.

Dashes = Weft up.

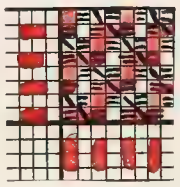
Stage 6.

3/1

Warp Twill.

"Necessary" Design.

Stage 7 (A)



= optional, i.e. Weft can either be up or down to give same effect.

Stage 7.

2/2

Twill.

Complete Design.

Lecture 8 (Cont.) The use of Grey in Textiles (Cont.)

I. As a distinct effect.

Pattern I.

½ Rods. Grey (DK)
1 White
3 grey (DK)
2 Wh.

Pattern II.

2 { ½ Blk. / ½ Wh.
2 { ½ Blk / ½ Lt. Grey

Pattern III.

a { 2 Blk. / 2 Wh. / 2 Blk.
b. { 1 Wh. / 1 Dk. Grey / 1 Wh.

In Patt. 1 the grey is made the basis in place of Blk. In Patt. 2 a stripe of white in the first repeat is supplanted by a similar stripe of grey in the 2nd repeat. In Patt. 3 a white stripe on a black ground in section "A", is followed by a grey stripe on a white ground in section "B".

II As a Shading Effect.

Patt. 1.

1 Rd. White
2 grey
3 black.

Patt. 2.

1st { 1 White / 1 Mid Grey. / 1 Black
2nd { 2 Dk. Grey / 6 Blk.

Patt. 3.

3 Rods. Mid. Grey.
a. { 1 White. / 3 mid grey.
b. { 7 Black

In Patt. 1 a shaded stripe is produced. In Patt. 2 there are 2 forms of stripes, the 1st form being shaded white to black, & the 2nd form grey only to Blk. In Patt. 3, "a" & "b" are the respective centres, with mid-grey on each side.

Note. The Rule of accordance between intensity of colours & extent of surface is here employed.

Some Shaded Patterns.

Balanced Style.

x = Centre of shading. { 1 White / 2 Light Grey / 3 Dk. Grey / x ½ Black / 3 Dark Grey / 2 Light Grey / 1 White / 2 Lt. Grey / x ½ Dk. Grey / 2 Lt. Grey

24 ends in Repeat.

BALANCED.

* 8(4) White. / 1 Lt. Grey. / 3 mid. Grey. / 1 Dk. Grey. / x 8(2) Blk. / 1 Dark Grey. / 3 mid Grey / 1 Lt. Grey.

26 (16) ends in Repeat

1st Stripe { 2 White / 5 Lt. Grey / 2 Dk. Grey / 2 Blk.
2nd Stripe { 1 White / 2 Lt Grey. / 1 Dk. Grey / 1 Blk

16 Rods. in Repeat.

UN-Balanced = PATTERN.

LECTURE 5.

NOV 29th '12

The Principles of Gradation in Textiles.

Public Taste is always changing, what is true to-day may not be true to-morrow. The following rule, however, indicates the principles which ought to serve as a guide, but it is necessary to slightly vary it in accordance with present day conditions.

RULE — The extent of surface allotted to each colour in a study should be in accordance with the force of contrast present in the combination, i.e. small surface — strong contrast; large surface — small contrast.

Example		Very Good Effect	Good	Fairly Good	Bad.
1.	Black.	1 (= Fairline)	H (Shepherd's Plaid.)	16	64
	White.	1	H	16	64
2.	Black.	H (or 1 fair. = line toned down)	16	64	//
	Lt. Grey.	H (or 1 fair. = line toned down)	16	64	//
3.	Black.	16	64	4 (? not so bad)	1 (? not so bad)
	Mid. Grey.	16	64	4 (? not so bad)	1 (? not so bad)
H.	Black	64	64	16 (?)	4 + 1
	Dark Grey.	64	64	16 (?)	4 + 1

This list is classified for "suitings".

These examples are generally true for a cloth about 64 Ends per 1".

Application of the rule to cloths & dress fabrics.

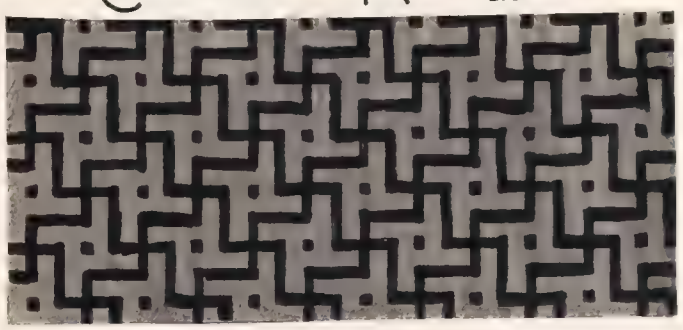
(1) Cloths. (Coatings, Trouserings etc.)

If pure Black & White are employed, small effects naturally yield best results.

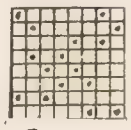
P.T.O.

Analysis of Colour and Weave Effects.

Effect No. 1.

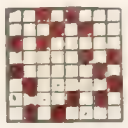


Dots = Warp up,



and Blanks in Real Design.

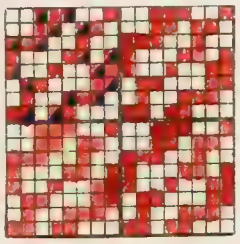
"Necessary"



Mks. = Weft.

Basic Design.

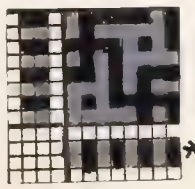
Design I.



Twill ∴ Poor.

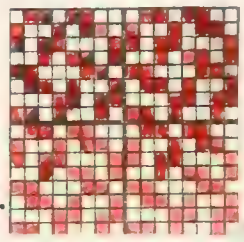
Base in Blue.

Order of Colouring.



Wefting. Warping.

Design II.



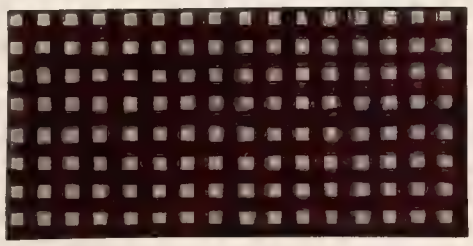
Crape ∴ Good.

Base in Blue.

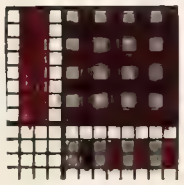
Either of these 2 designs, would produce Effect No. 1.

Note. A crape weave is better than a twill for giving "all-over" effects.

Effect No. II.

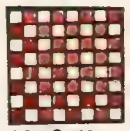


Colour Plan.



"Warp-up".

Weave. (Plain)



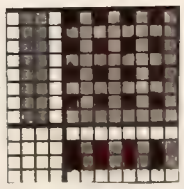
Marks = Weft.

The "Bird's Eye" Effect.

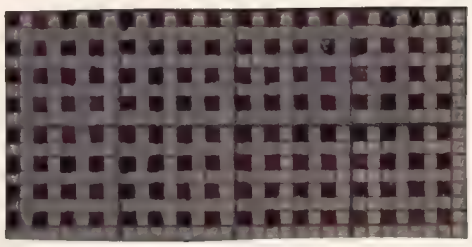
Marks = Weft.

Plain. Weave

"Warp-up".



Colour Plan.

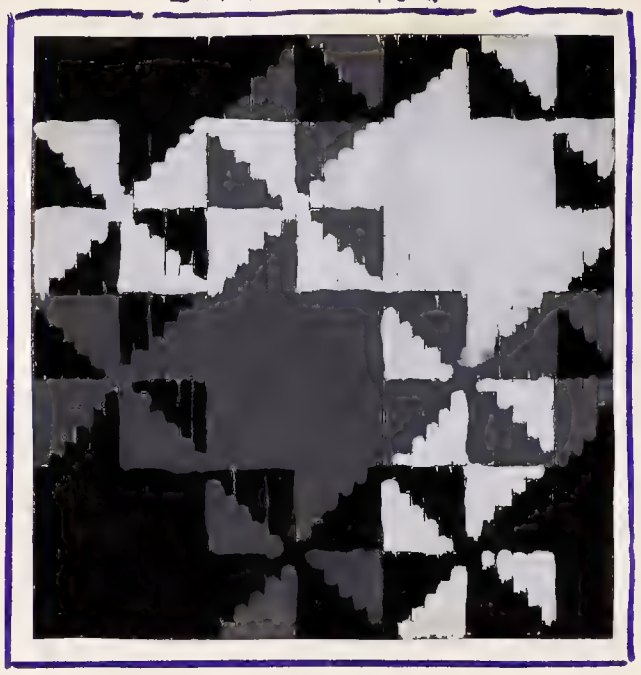


Effect No. II.

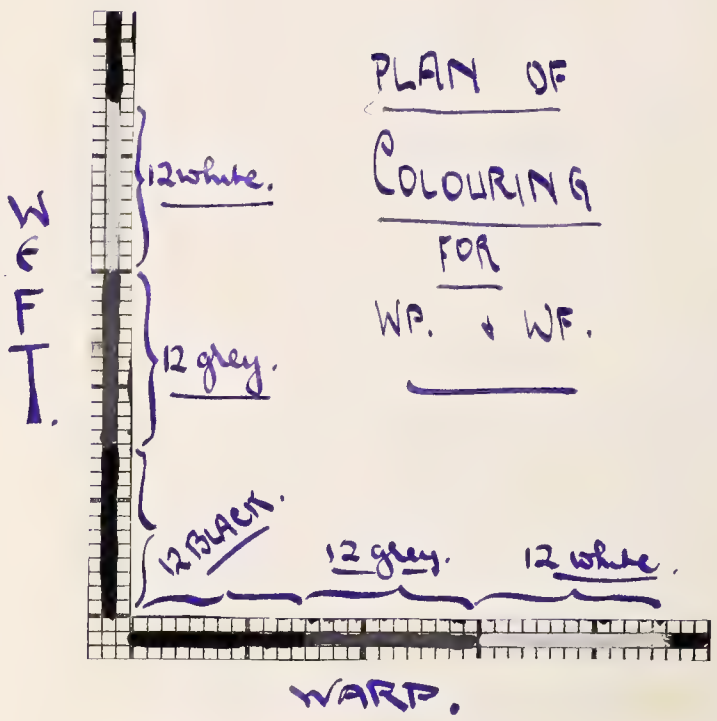
Analysis of Colour & Weave Effects.

Star. Pattern.

Colour & Weave Effect.



In 3 Colours



Plan of Colouring for WP. & WF.

MKS. = WF.

Weave to produce the above effect.

One Repeat.

LECTURE 9. (Cont.) Principles of Gradation in Textiles. (Cont.)

Application of the rule to Cloths & Dressfabs. (Cont.)

List of effects suitable for Suitings, Coatings, Trouserings etc.:-

Odd no. Patts. most suitable for Winter wear.

Patt. 1.
1 Black
1 White

Patt. 3.
2 Blk.
1 Wh.

Patt. 5.
3 Blk.
3 Wh.

Patt. 7.
9 Blk.
3 Wh.

See Previous Page for RULE

Patt. 2.
2 Black
2 White

Patt. 4.
1 Blk.
2 Wh.

Patt. 6.
4 Blk.
4 Wh.

Patt. 8.
3 Blk.
9 Wh.

Even no.'d Patterns most suitable for Summer Wear.

II. Dress Fabs. Larger styles are generally employed as compared with coating patterns, but the no. of Ends placed together may frequently be less than in the more pronounced coating styles. The following examples give an idea of what is required.

Patt. I.

2/2 twill.
1 Black } 32 Ends *
1 Wh. }
2 Blk. } 32 Ends *
2 Wh. }

Patt. II.

2/2 twill.
4 Blk. } 32 Ends. * —— (36 Ends.) A.
4 Wh. }
2 Bk. } 48 Ends. * —— (50 Ends) A.
× 2 Wh. } start with white ×.

NOTE. I. The no. marked * is generally a no. which contains the repitition of the effect a precise no. of times.

II. The simple effects making a complete pattern may be balanced if desired. This will necessitate a no. for the repitition which does not contain the pattern an exact no. of times. (see A.)

III It is necessary to carefully consider the weave in relation to colour repitition.

Sect 9 (cont). **Principles of Gradation in Textiles (Cont.)**

Example on Pattern III.

A colour pattern repts on 82 Ends. } ∴ the effect will repeat on 164 Ends.
The Weave = 2/2 Twill - repts on 4 Ends }

Pattern III.

1 BK. 1 Wh.	8 Ends.	4 repts of colour pattern = basis.	16 Ends.	Another Effect.	17 Ends.*	Effect in which each stripe is Balanced.*
2 BK. 2 Wh.	16 Ends.		32 Ends.		34 Ends.*	
1 BK. 1 Wh.	8 Ends.		16 Ends		17 Ends.*	
4 BK. 4 Wh.	32 Ends		32 Ends		68 (or 36)*	

Pattern IV.

K	2 White. (+4=6) 4 Black. 6 Wh. ←	*
a	4 Bl. 4 Wh. } 32 Ends.	
b	3 BK. 1 Wh. } 16 Ends.	
c	2 BK. 2 Wh. } 16 Ends.	
d	1 BK. 1 Wh. } 8 Ends.	
e	2 BK. 2 Wh. } 16 Ends.	
b	3 BK. 1 Wh. } 16 Ends.	
a	4 BK. 4 Wh. } 32 Ends.	

This is a balanced style as the last 4 of white added to the first 2 of white * = 6 Ends, which makes stripe K symetrical having 6 of white on each side of 4 of Black.

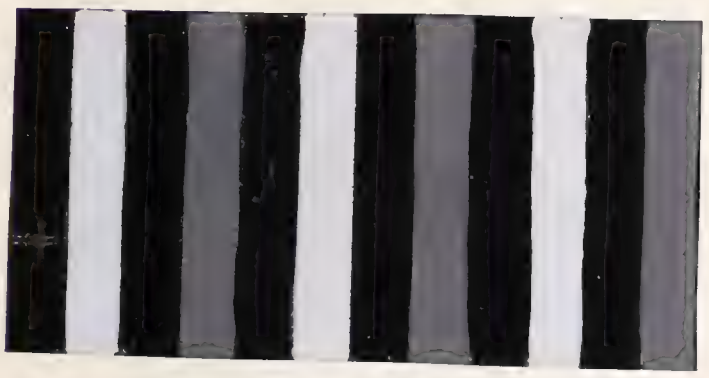
LECTURE 8.

THE USE OF GREY IN TEXTILES.

Pattern

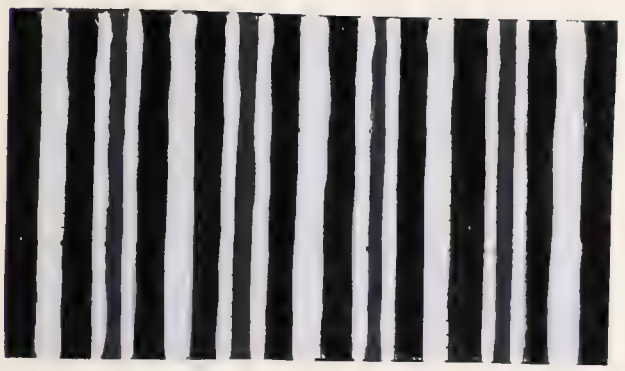
I.

Pattern



II.

Pattern



III.

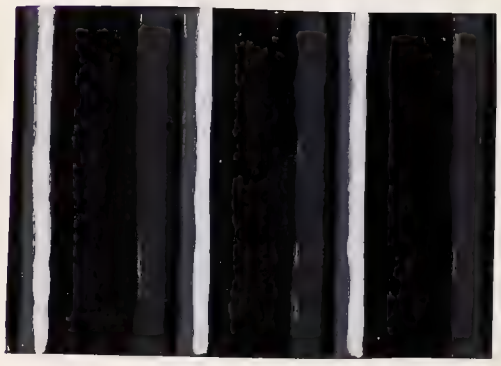
I. AS A DISTINCT EFFECT.

Lecture 8.

The use of Grey in Textiles.

Pattern I.

Pattern II.



Pattern III.

II. As a Shading Effect.

Lecture 10. Notes on "Colour". Dec. 13.

Pigments are not actual colour, but have only the power of reflecting colour.
There are two powers of contrast, (1) contrast of tone or shade, & (2) contrast of hue or colour.
Any particular colour has the power of contrasting with one other colour, more definitely than with the remaining colours. These arrangements are called complimentary colours, & may be ascertained by reference to the chromatic circle in which the colours of the spectrum are arranged in their complementary order.

Examples

(1) Blue is the complementary of Orange & Vice Versa.
(2) Red is the Complimentary of Green & Vice Versa.
(3) Yellow is the Complimentary of Purple & Vice Versa.

&c. &c. &c.

When 2 colours are placed side by side, the effect of contrast is such that each colour appears of a different hue, than if surrounded, say, by white paper.
The effect caused by such contrast is Termed "simultaneous contrast".

All colours are good colours when Suitably used for the right purposes, & when arranged with the right degree of contrast, one with another.

Lecture № 11. Notes on "Colour" (Cont.) Dec 20th, 12

In trying to harmonise two colours, one of them must be more retiring than the other. As to how much it must be more retiring would depend upon the purpose the material is intended for. When a design is worked in, say, 2 colours, each of the same amount of luminosity, & quantity of surface, as the other, then the effect is faulty, in so much that it will not appear "still", i.e. the eye will not be able to seize on either as the principal colour, & an "undecided" effect will result, with both colours fighting ineffectually for supremacy.

Having now got a rule for producing harmonies, we find that there are 2 kinds of "colour" harmonies :—

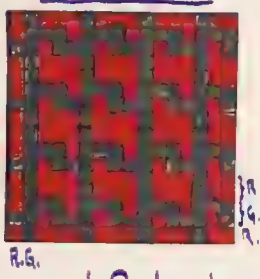
(1) Harmonies of Analogy. These are composed of colours which are closely allied in the chromatic scale. These are more particularly suitable for the more sombre effects in colour.

(2) Harmonies of Contrast. These are composed of colours which are further removed in the chromatic scale, than in examp. I above. In this class, favourite examples can be taken in Reds & Greens; Blues & Orange shades or tints; Yellows & Violets. These are all, however, extreme examples.

In either of the above forms of harmony, the effect of contrast can be heightened or sobered, by the addition or otherwise (i.e. subtraction) of a contrast of tone.

Colour & Weave Styles.

Effect.



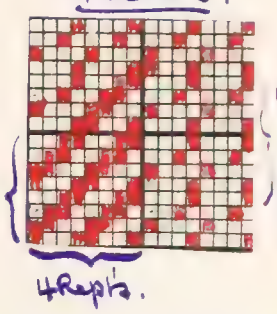
Warp = 1 Red, 1 green.

Weft =
2 Red.
2 Green.

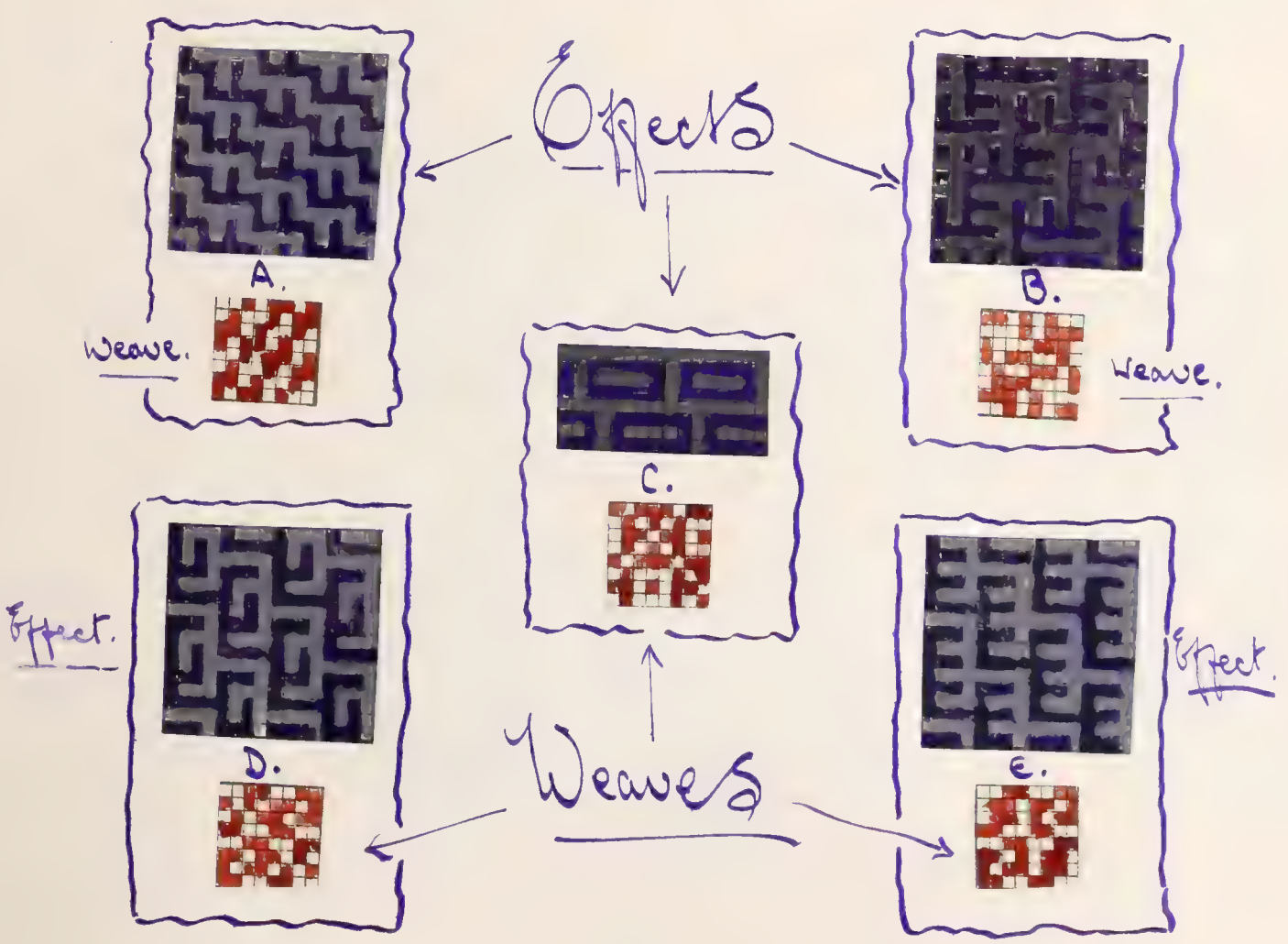
Analysis of C. & W. Effect.

Weave = 2/2 Twill.

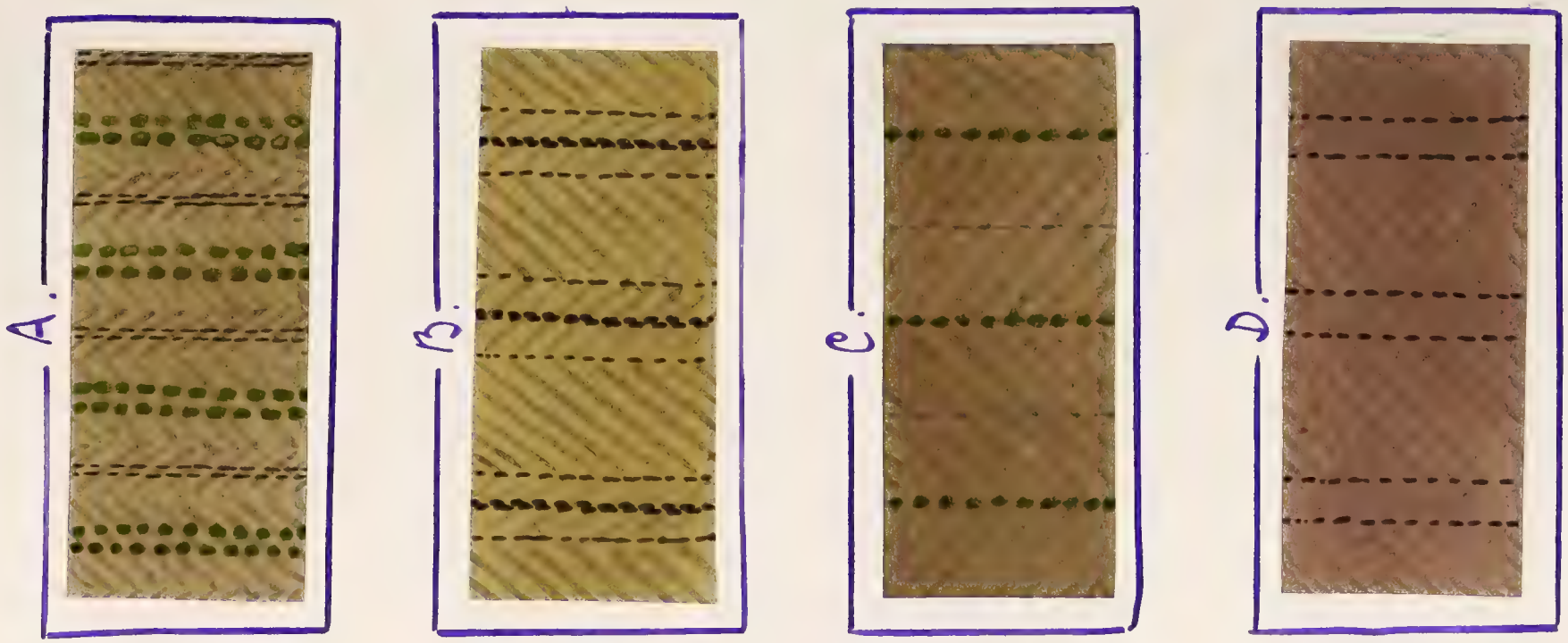
Weave.



Examples showing how, with 8 shafts, & a up. — 1 dk., 1 cr., various C. & W. effects may be produced. In all cases, weft is also 1 dk., 1 cr.



LECTURE 12.



Lecture 12. Designing Striped Botany Cloth. Jan. 10th/13

On a mounting sheet will be found several sketches for a striped suiting or costume cloth, woven 2/2 twill with Botany yarns (2/36's). One of these examples has been selected as the best (A), & particulars worked out on a loom ticket, to be found on a mounting sheet following, for the production of patterns of this style in various shades of Brown.

Lecture 13. The Attributes or Qualities of Colours. Jan 24th 13

(1) **Red** This colour may be called strong, brilliant, & magnificent. It gives the idea of warmth, brightness & partially of lightness. It is specially employed in twist Mds., in spotting Mds., & also as overcheckings in coatings. In its shades it gives very useful browns, & in its tints it gives salmons, roses, etc.

(2) **Orange.** Orange approaches yellow for brightness. It is more luminous but less hot than Red, & often possesses a hardness. In its shades it gives olive browns, & in its tints gives fawns, tans etc. It is specially used in twist Mds., Spotting Mds., & for overcheckings.

3. **Yellow.** This colour is specially remarkable for its purity & brightness, being the most luminous colour of the spectrum, & bearing the same relationship to light that blue bears to darkness

Lecture 13 (Cont) The Attributes or Qualities of Colours. (Cont.)

(3) Yellow (Cont.) Its employment in textiles is limited owing to its lightness. In its shades, however, useful colours are found such as yellow-olives etc., & in its tints we get cream, tinted whites etc.

(4) Green This is, in nearly all its shades & tints, a nature colour, & one very popular in textiles. It approaches blue for coolness. It is much used for suitings costume cloths & similar materials in its medium & dark shades, such as olive, deep sea, & brown-greens. In its tints we get grass, emerald etc, cool, summer colours much used.

(5) Blue This is the coldest colour of the 6, & gives the idea of darkness. It is very largely employed in textiles. In its shades we get indigo, navy etc., & in its tints lavender, Robin-egg, & various green-blues.

(6) Violet. This is a fairly warm colour, & much favoured for stripes etc. in fabrics. In its tints we have lilac, amethyst, & its shades contain such colours as plum, pansy, prune etc.

Reference should be made to the disc-spectrum painted out on a mounting sheet.

Should a list of shades of each colour be required, refer to the quarterly Report, in each no. of which appears a list of the popular & new shades.

LECTURE 17.

A7843. 1000.

T. V. STAUB.

City of Bradford Technical College.

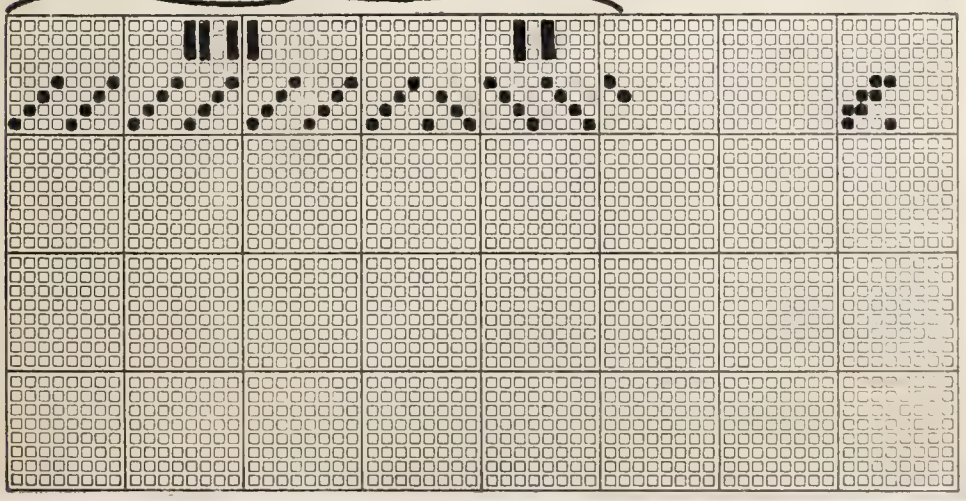
DEPARTMENT OF TEXTILE INDUSTRIES.

Hand Loom No. ? Date on Loom ~~~ Date off Loom ~~~

WARP.	WEFT.
Counts & Quality 2/36's BOTY.	Counts & Quality 2/36's BOTY.
VARIOUS COLOURS	VARIOUS SHADES
(see other side.)	— SECTION RANGE.
14's Reed H 's	Picks per inch 58.
SCHEME.	
Weave Patterns with Various Coloured Wefts.	
Bradford Set. 50·4.	

DRAFT.

WEAVE I.



FOR OTHER SIDE of Card

See Overleaf.

See Notes.

Lecture 12.

Date made out Dec. 20th '12. Warp No. ?

Hand Loom No. ? Piece No. ?

Style of Fabric Boty Suiting. (or Costume Cloth.) Weight per yard

WARPING AND DRESSING PARTICULARS.

Counts and Quality 2/36's Coloured Boty. (1) Dk-Brown, Mid-Brown, + Black (2) Mid-Brn., Light-Brn. + Blk (3) Lt-Mid-Brn. Red, Blk.

No. of Ends in Warp (without lists) 1416, giving 56 ends per inch.

No. of Shafts 4 Lists 1/18's White Boty (18 at each side, 3 in a dent.) Not Sized.

No. of inches wide (WITHIN LISTS.) Loom 36" Grey 34½" (?) Finished 30" (?)

No. of yards long. Loom 6. Grey Finished

No. of Sections 3 Ends per Section 472 Beams 1.

DYEING AND FINISHING PARTICULARS.

Clear Finish.

(To be well brushed, to develop good soft face.)

Weight of Piece. Grey Finished

Scheme.

Thds.
* 12 GROUND (a.)
2 Light Grd. Colour (b.)
1 (a.)
2 (b.)
* 17 (a.)
1 Black.
1 (a.)
1 Black.
5 (a.)

* Start with 2 of ground } EACH SECTION.
* Finish with 3 of ground }

SCHEME.

SECTION I.	SECTN. II.	SECTN. III.
12 Thds. DK. BROWN.	12 Thds. MID. BROWN.	12 Thds. LIGHT-MID. BROWN.
2 " MID. "	2 " LIGHT "	2 " RED
1 " DK. "	1 " MID. "	1 " LT.-MID. BRN.
2 " MID. "	2 " LIGHT "	2 " RED.
17 " DK. "	17 " MID "	17 " LT.-MID. BRN.
1 " BLACK.	1 " BLACK.	1 " Black.
1 " DK. BRN.	1 " MID. "	1 " LT. mid. Brn.
1 " BLACK.	1 " BLACK.	1 " Black.
5 " DK. BROWN.	5 " MID. "	5 " Lt. mid Brn.

42 Thds. in Rept. 11 repts. + 10 Thds. per section.

2 (1/18's) Boty Thds. White, between each SECTION. (X)

Heald Order.

4 heald Shafts, each having 363 mails (+ 1 per shaft for dividers (X)), 34" wide.

See Notes.

for other side of Card

See page before this

Lect. 14. **Analogy + Contrast.** Jan 31st '13

It is not possible as a rule to regard colours singly, that is to say observations respecting them will only be relative. Thus combinations of colours may be arranged as follows, both for ability + for observation.

(1) Black + White ——— (luminosity contrast only)
(2) Blk., Wh., + Grey ——— (ditto.)
(3) Blk. or Wh. or Grey, + one colour.
(4) 2 colours.
(5) Blk. + Grey, or Blk. + Wh., or Grey + Wh., + one colour.
(6) 3 colours
(7) Blk., Grey, White, + one colour
(8) Bk. + Grey, or Bk. + Wh., or Grey + Wh., + 2 colours.
(9) 4 colours
(10) Complex Effects.

From a perusal of the above list it will be found that 2 very important factors have to be taken into account, namely Colour + Luminosity. (Extent of Surface must later also claim careful consideration.) These 2 factors must be very attentively considered, the list following being very useful in considering all types of colour compositions.

Combinations of 2 colours.

	Pattern 1.	2.	3.	4.
Colour	Contrast.	Contrast.	Analogy.	Analogy.
Luminosity	Contrast.	Analogy.	Analogy.	Contrast.

The above worked out in colours could be as under:-

Pattern I.	2.	3.	4.
Light Salmon.	Lt. Sky Blue.	Myrtle Green.	Dk. Navy Blue.
Dk. Lap Green.	Primrose Yellow.	Dk. Grey-Green.	Lt. Sky Blue.

Lecture 15. # Colour Compositions. Feb. 7th '13.

Note.
In combinations of 2 or more colours, the extent of surface given to each colour plays a very important part.
For Example, one Rd. of Red may vastly improve the value of a fabric, but 10 Rds. of red would produce an effect altogether useless.

Compositions of 3 Colours.

(1.) 3 colours in analogy {(a) Shaded effects. (b) Non-Shaded effects.
(2.) 1 colour with Bk. + Wh., Bk. + Grey, or Grey + Wh.
(3.) 2 colours in analogy with Bk. or Wh. or Grey.
(4.) 2 " " Contrast " " " " " " .
(5) 2 " " Analogy, with one in Contrast
(6) 3 colours in Contrast.

Note This list is not complete, as it is based on "Colour" alone; thus for a complete list it would be necessary to take "luminosity" into account.

4. Colour Compositions.

The examples most frequently encountered are :—

(1) 3 colours in analogy & 1 in Contrast.
(2) 2 " a " & other colours in contrast.

P.T.O.

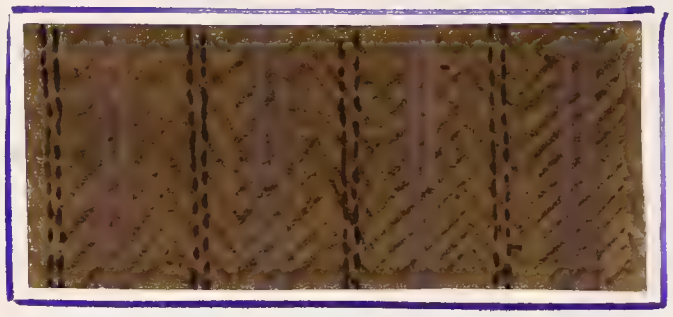
Lect. No. 13.

The Spectrum Colours.

Lecture 12.

A range of Patterns for Body. Costume Cloth.

See Loom Ticket, 2 pages back.

I.  DK.

II. MID.

III. LT.

See Notes.

Lecture 15 (Cont.) Colour & Weave Effects in Analogy & Contrast.

Just as with Blk. Grey & Wh., it is necessary to vary colour contrast in accordance with colour surface in the effect.
Thus for hair-line stripes,
(1) Strong Colour contrast, or
(2) Strong Luminosity contrast, or
(3) Contrast of Colour & Luminosity should be employed. Larger effects such as checks should be coloured in
(1) Analogy throughout, or
(2) Contrast of Colour & analogy of luminosity.
In general, colours go best together, when a binding colour is employed.

See mounting sheet for examples of colouring (Good Head) for C. & N. styles.

Lecture 16. The Origin & Arrangement of Colours. Feb. 14th 1913.

It is necessary that the colours employed in a design should be very carefully chosen, because a very slight change (2%) in one of the colours, may change altogether the tone of the design.
Example.
a dark brown in combination with a clear sky-blue, gives a clear hard effect; but if the sky-blue is slightly

"greened", an altogether different colour effect is produced.

Note.

It will be necessary, then to design colours on a system, so that the exact shade necessary will be represented in our ranges.

Colours.

There are 3 tones or kinds of colours, quite distinct.

(1) Body-Colours. These may be light or dark, but they always possess a characteristic tone, got, when using water-colours, by adding Chinese white. They are sometimes called "Pastel" shades.

(2+3) Transparent Colours. These may be either (a) Tints, or (b) Strong Colours.

Each range of colours, whether it be in wool, silk or cotton, should contain examples of each type of colour. If, however, Pastel shades are fashionable, then the colour ranges should be largely composed of Pastel colours; & so on with the other types.

The Designing of Colours.

A great no. of colours may be produced by taking 2 or 3 primary colours, or other suitable colours, & combining them in different proportions, allowing first one to predominate, then the other.

Example. This shows 7 shades obtained from 2 colours, thus:—

	1	2	3	4	5	6	7
Red	4 parts.	3	2	1	1	1	1
Green	1 part.	1	1	1	2	3	4

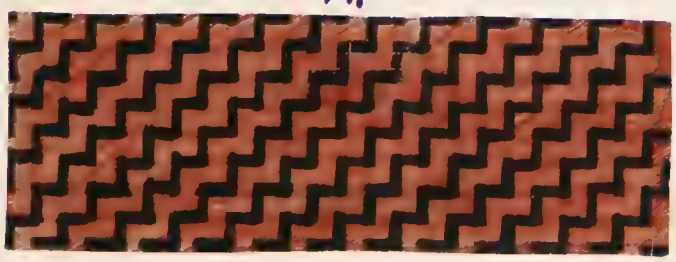
P.T.O.

Lecture 14

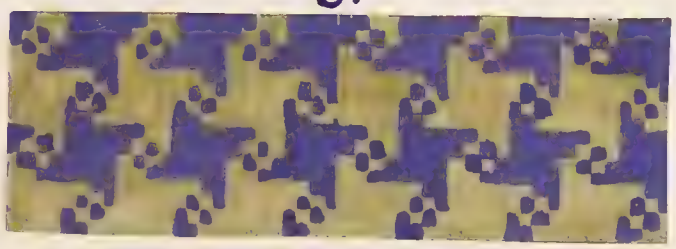
Analogy & Contrast in Colours.

Examples of above, worked out in C. & W. effects.

A.

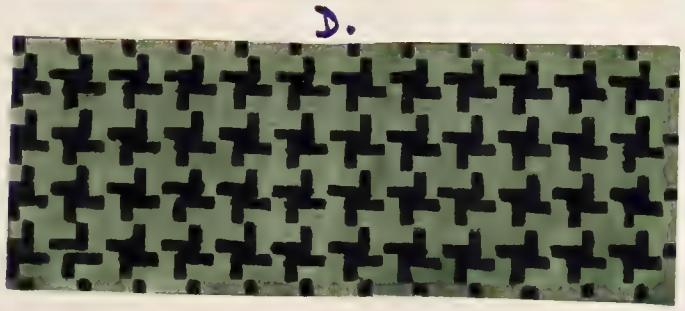


B.



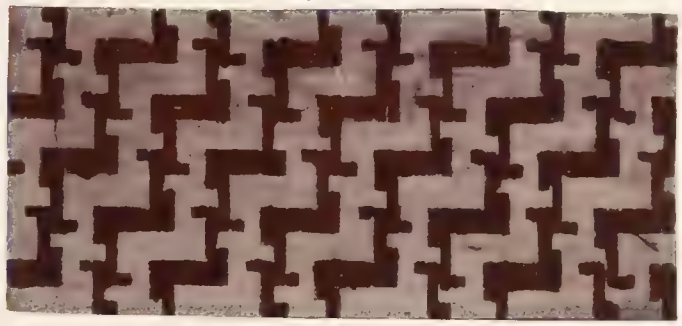
C.

D.



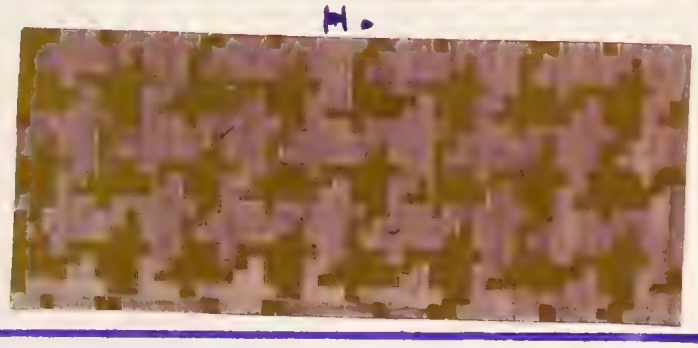
E.

F.



G.

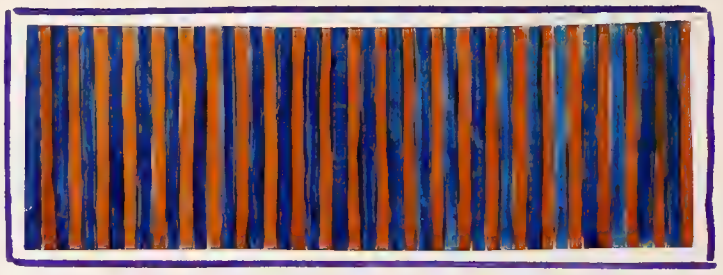
H.



		Colour.	Luminosity.
Examples A, B, C & D	=	Contrast,	____ Contrast.
" E, F & G.	=	Analogy,	____ Contrast.
" H.	=	Contrast,	____ Analogy.

Lecture 15.

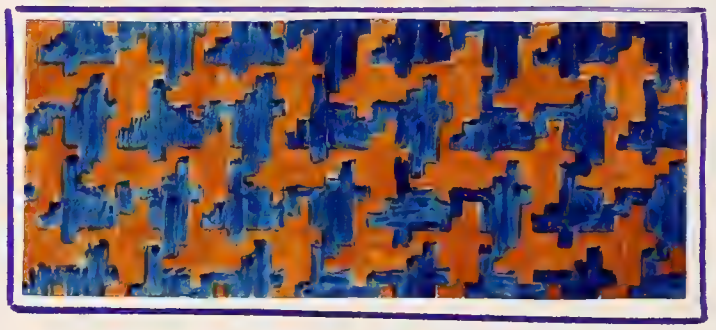
SMALL EFFECT.



GOOD.

CONTRASTING COLOURS.

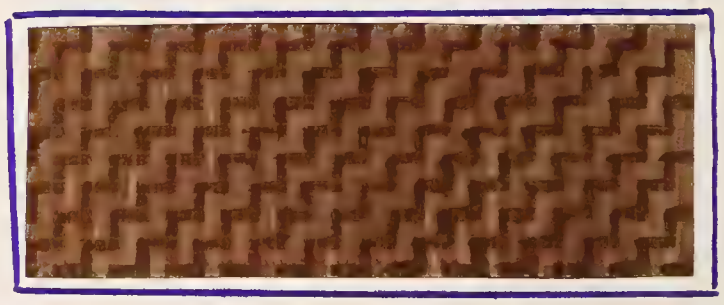
BIG EFFECT.



BAD.

THE COLOURING OF C. & W. STYLES.

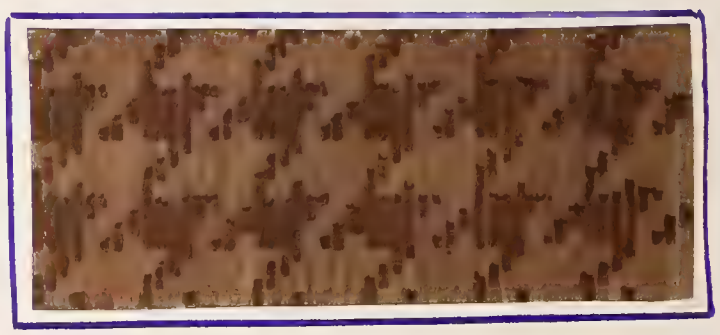
SMALL EFFECT



POOR.

ANALOGOUS COLOURS.

BIG EFFECT.



GOOD.

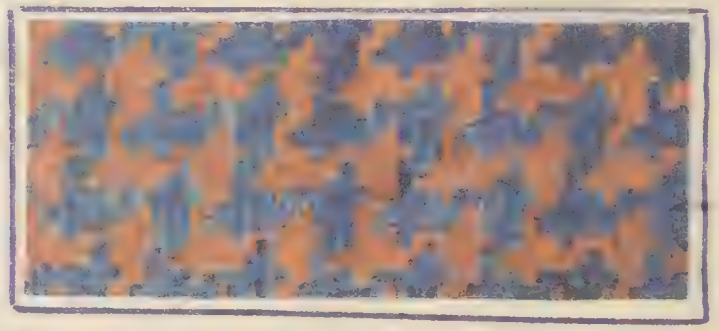
Lecture 15.

SMALL EFFECT.

GOOD

CONTRASTING COLOURS.

BIG EFFECT



BAD.

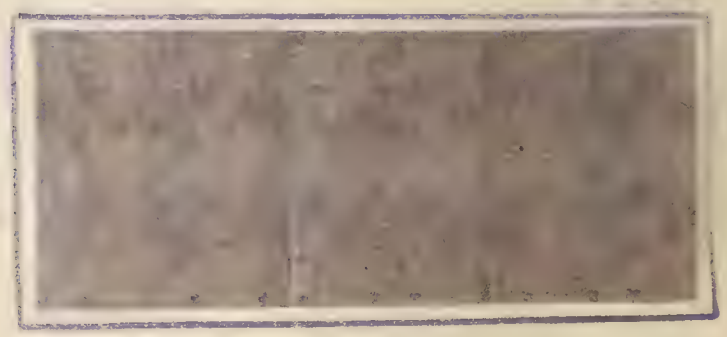
THE COLOURING OF C. & W. STYLES.

SMALL EFFECT

POOR.

ANALOGOUS COLOURS.

BIG EFFECT



GOOD

Lect. 16 (Cont). Origin & Arrangement of Colours (Cont.)

There are 3 chief advantages of the system outlined in this lecture :-

(1) No reversing of pattern possible.
(2) Fewer Colours necessary.
(3) Organisation (ie. the arrangement) itself facilitates good design.

Lecture No. 17. February 21st

Production of Colour.

There are many ways of producing colour in fabrics, & it may be done at nearly any stage in their manufacture, from the wool to the cloth. A list of the processes is given hereunder :-

I Wool (loose)
- (a) Wool dyeing.
- (b.) Slubbing Dyeing (mixtures)
- (c.) Top printing or melanging (mixtures)
- (d) Mixing
- (e.) "Marl" colouring.
- (f) Twisting different coloured Yns. together.
- (g.) Treating with Resist. (Stripe Yns. after being dyed, are sometimes so treated — Then woven in piece — cloth piece-dyed for ground Yns — resist Yns. not effected but keep their original colour)

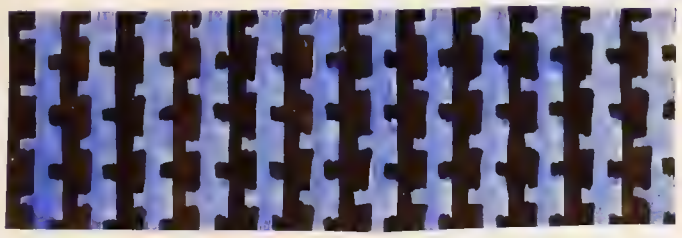
II YARN
- (a) Yarn Dyeing
- (b) Warp Dyeing
  - (1) Hank form (2) Cop form.

III. Piece
- (a) Piece dyeing
  - (1) Solid. (2) Cross (3) Mixture, dyeing

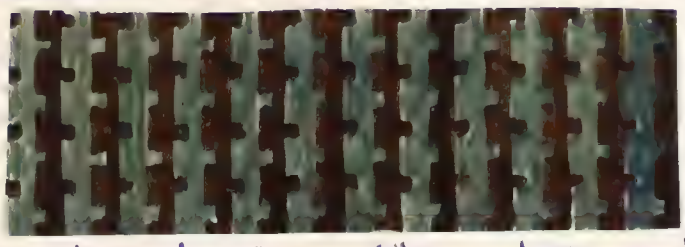
"Chlorinating". This is a process like "Resisting", but yarn so treated, only resists the piece-dye & Yns takes on a lighter shade, than the ground ordinary yarn.

Lecture 16.

EXAMPLE No. I.



Brown + Sky-Blue = clear, hard, effect.



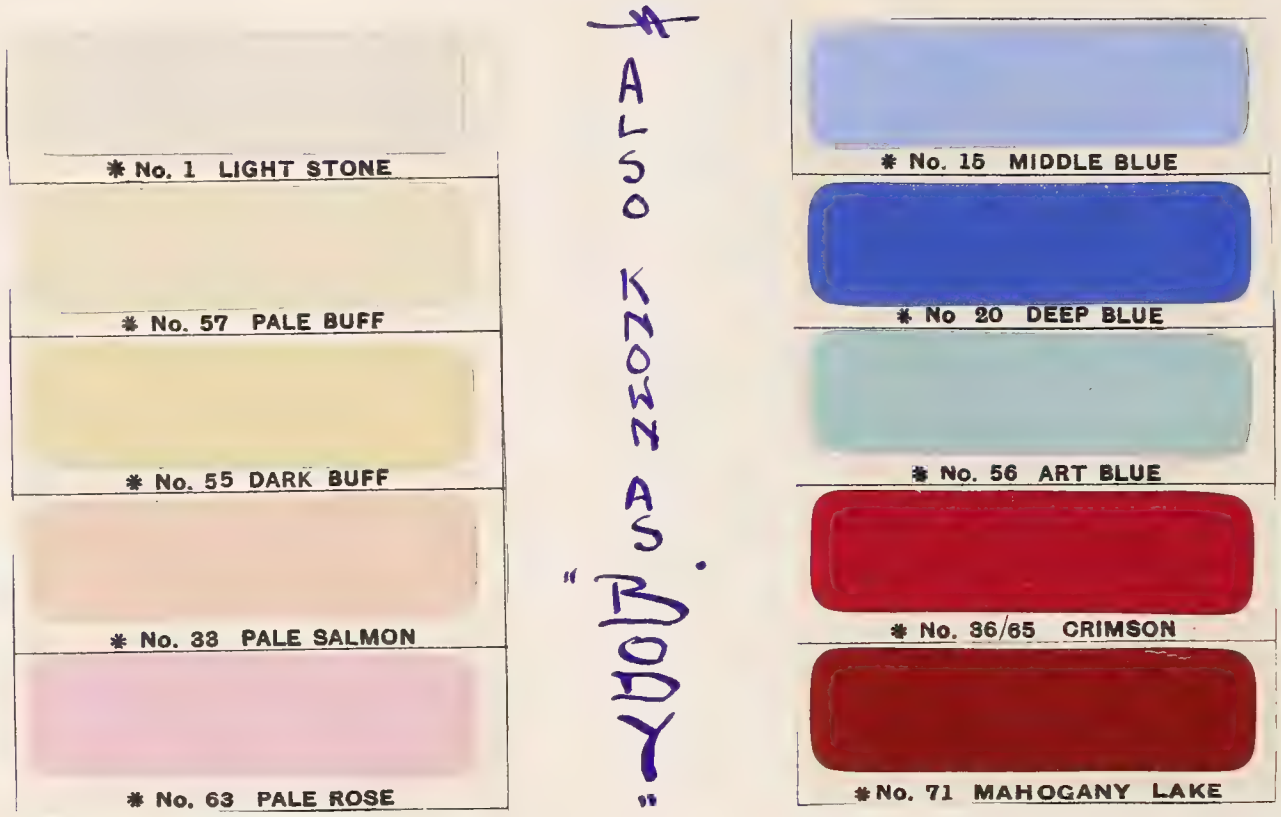
With the blue "greened", a much softer effect.

"PASTEL" SHADES.

* No. 6 WHITE	OR	* No. 66 PERMANENT GREEN
* No. 17 CREAM		* No. 14 LIGHT GREEN
No. 3 CANARY		No. 21 SAXON GREEN
No. 23 PALE GOLD		* No. 7 OLIVE GREEN
* No. 13 YELLOW TAN		* No. 5 MIDDLE GREEN
No. 11 DARK TERRA COTTA		* No. 25 LIGHT BLUE
* No. 9. POMPEIAN RED		* No. 16 FRENCH GREY
* No. 67 CLARET		* No. 47 BLUE SLATE

* Good = Colors.

LECTURE 15.


* No. 1 LIGHT STONE
* No. 57 PALE BUFF
* No. 55 DARK BUFF
* No. 38 PALE SALMON
* No. 63 PALE ROSE
ALSO KNOWN AS "BOY."
* No. 15 MIDDLE BLUE
* No 20 DEEP BLUE
* No. 56 ART BLUE
* No. 36/65 CRIMSON
* No. 71 MAHOGANY LAKE

PASTEL SHADES.

— CONTINUED. —

Lecture 18. **Dyeing.** (Cont.) Feb. 28th

In dyeing there are 3 chief points to think of
(a) Effect, (b) Economy + (c) Manipulation.

Wool-dyeing. This is done mostly in the Woollen trade, & hardly at all in the W.O. trade.
Printed Tops: when mixed give level mixtures, more so than by mixing solid tops.
Twist in yarns regulates their lustre – more twist, less lustre. The amount of twist put in yarn is in proportion to the output of the frame, ∴ 2 × twist = ½ output = 2 × cost (& price).
Yarn Dyeing this is not done much as it is difficult, & often results in large % of waste
Cop Dyeing. Dyeing yarn in cop form is more popular, the dye being forced through perforated, waterproof, paper cop-tubes, into the yarn.
Solid dyeing in the piece. This is a good method if the cloth is all of the same material. If 2 sorts of wools, however, have been used in the cloth & but poorly mixed, then blotchy places, dark & light patches, etc. result.
Cross Dyeing is used to get colour onto Union goods such as Lustres etc (Cott. Wp & Mohair or English weft). The Cotton wp. is usually dyed before looming, & then the grey piece is dyed for weft.
Mixed Dyeing. This is done in the case of, for instance, lustre cloths, which are woven in the grey for both wp. & wft, & are then piece-dyed for, 1st, the Cotton wp. & then the mohair weft.
Resists. These are liable (unless very great care be taken) to be uncertain in their results, & ∴ should only be used with the Sanction, & at the risk of the merchant (i.e. the orderer or purchaser.)
Chlorination, being rather costly, is not much used.
Mixing:-

Mixtures.

These are really of 2 types, viz.:-
(a) Real or true mixtures. Example – Royal Blue + Yellow.
(b) Solid Toned Colour. Ex.– Black + Dk. Green; or Blk + Dk. Brown.
Either of these give a toned black.

P.T.O.

Lecture 18 (Cont.)

A good range of Mixtures.

1. Black + White (greys).
2. One Colour with Black, White, or grey.
3. 2 colours.
4. 2 colours with Blk., Wh., or grey.
5. 3 colours.
6. Blk. + Wh., or Blk. + Grey, or Wh. + Grey, + 1 colour.
7. 4 colours
8. Greys — Tinted or Topped (i.e. slight addition of another colour.)

In Selecting a stock of shades, it is necessary to have equal gradation in the tones (i.e. each colour) + their shades. For example a good scheme is given below, in which all the colours range from DK. to Lt. in the same steps.

Colour Mixtures.

PROPORTIONS. 15/1	Blk./Wh.	Red/Blk.	Red/Wh.	Yellow/Blk	Yell./Wh.	Blue/Blk.	Blue/Wh.	Red/Yellow	Red/Blue	Yell./Blue
7/1										
3/1										
1/1										
1/3										
1/7										
1/15										

The above table is for mixtures of 2 colours, for 3 colours see under:—

Mixtures of 3 colours

A.

Red	15	7	3	1	1	1	1	3	7
Yellow	1	3	7	15	7	3	1	1	1
Blue	1	1	1	1	3	7	15	7	3

B.

Red	15	7	3	1	3	7	1	3	7
Yell	3	7	15	7	3	1	1	1	1
Blue	3	1	3	7	15	7	1	1	1

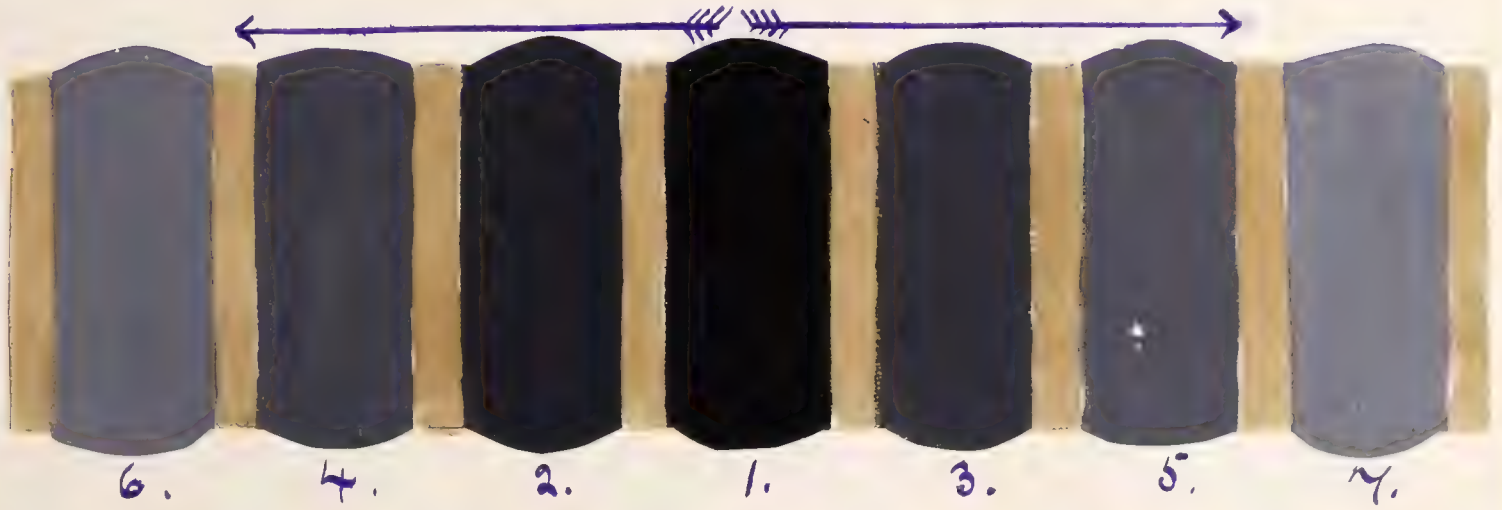
For 4-colour mixture Tables see over-leaf.

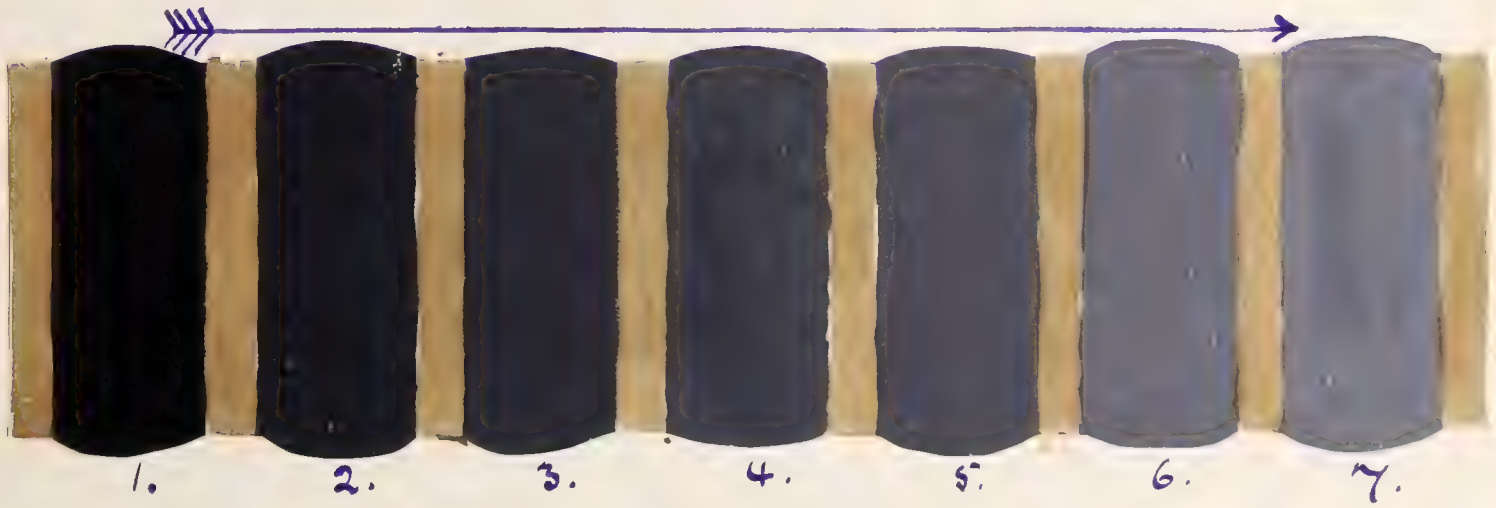
P.T.O.

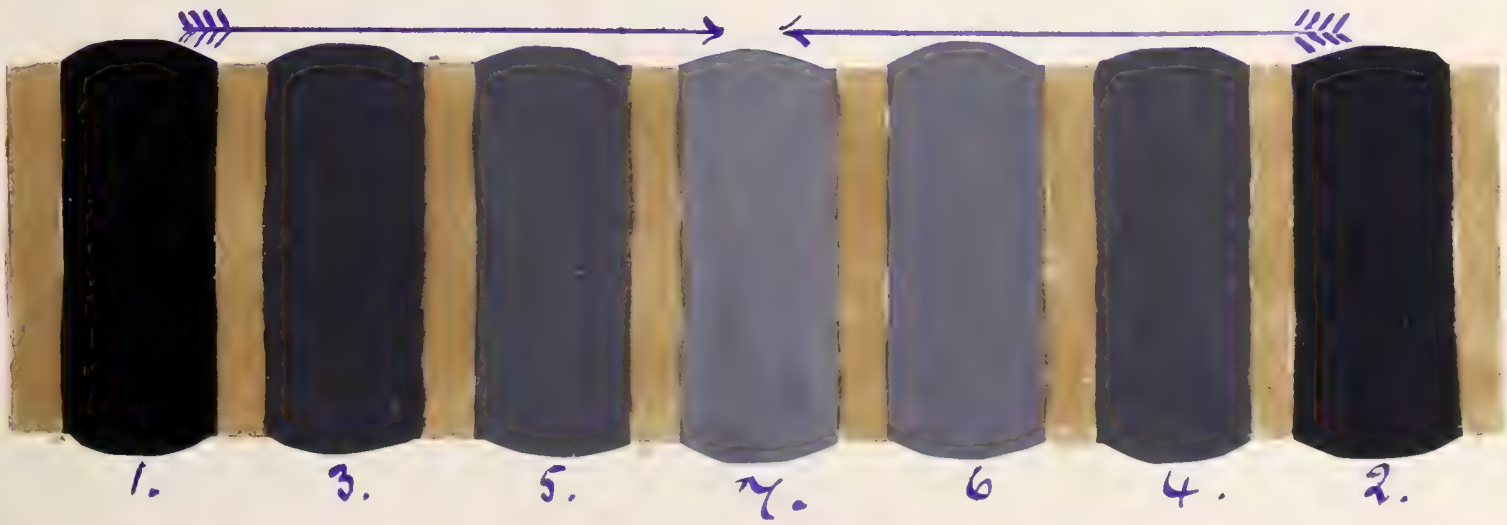
Lecture 18.

Methods of Grading. See Notes.

I. On Cards of Yarns.







Lecture 19.

The Effect of Light on Colour.

+ Light.	Colour.	− Light.
	Yellow-Green.	
	Red-Orange.	
	Green.	
	Violet.	
	Red.	

Notes on the above.

Lect. 18 (Cont.)

Mixtures of 4 Colours.

Red.	15	7	3	1	1	1	1	3	7
Yellow.	3	7	15	7	3	1	1	1	1
Green.	1	1	3	7	15	7	3	1	1
Blue.	1	1	1	1	3	7	15	7	3

Methods of Grading.

It is necessary that samples of yarn, cloth etc, when mounted for examination, should be graded, both for convenience & effect. The 3 methods of grading a card of yarns usually followed, will be found represented on a mounting page. In pattern ranges of cloth it is often found that the patterns start on the Right hand side dark, & shade to light on the left.

Lecture 19: March 6.

Effect of Light on Colour.

It will be noted that colours change & are influenced, according to their surroundings, or what is mixed with it.

For example the Table below gives the effect produced by darkening or lightening various colours, either by adding or subtracting light, as thrown on to it, or by adding dark or light materially (i.e. in form of paint.)

Standard Colour	+ Light.	− Light.
Red.	Bluer (?)	Browner.
Red - Orange.	Orange to yellow.	Tendency towards the Red.
Orange.	Yellowish	Brownish - Green cast.
Yellow.	towards white.	Greener.
Yell. Green.	Towards the Yellow.	Browner.
Green	yellowish	Bluish.
Blue	greenish	Purplish
Violet.	Bluer	Red - Suspicion of.

P.T.O.

Lecture 19 (Cont.)

Fancy Yarns.

These usually come into favour about every 7-10 years, & are very useful for taking away the flatness of the cloth face. Roughly there are 6 sorts of fancy twist yarns, namely:—

(1) 2/fold yns.
(2) 3/ " " .
(3) Cloud Yarns
(4) Knop yarns.
(5) loop " .
(6) Gimp " .

} Fancy yns.

Contrasting colours are usually employed with the exception of yarns for proofing-Goods, & Covert Coatings, in which goods the twists are in analogy usually.

I. 2/fold Twists.

These are of every-day employment. The regularity of the twist is very important. Variety may be introduced by varying the no. of turns per 1", or by varying the direction & relative no. of twists in the single or 2/fold yarn.

II 3/fold Yarns. Under this heading comes the well-known "Corkscrew" yarn. Other 3/fold yns. are also possible.

III Cloud Yarns. In these mds. the colours show up at intervals. First one md. being closely twisted round the other & hiding it, & the positions then being reversed.

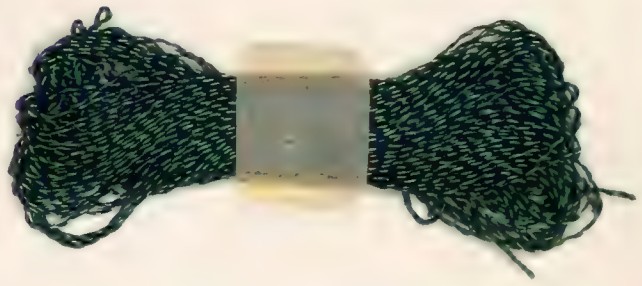
There is also a well recognised twist clouded yarn made by the rising & falling of a projecting rod placed between the 2 mds. to be twisted together, above the spindle, & which varies the amount of twist put in — the lower the arm the more twist.

Printed or cloud effects may also be produced by the "Tyed" hank method. In this case, the hank, before dyeing, is tightly tyed at specified intervals, so that, when dyed, the dye does not get to the tightly-tied part, which remains either white or a light colour.

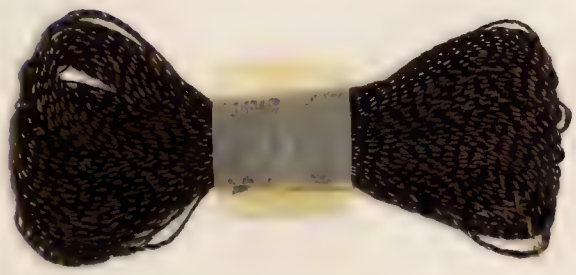
Cloud yarns may also be produced by spinning from

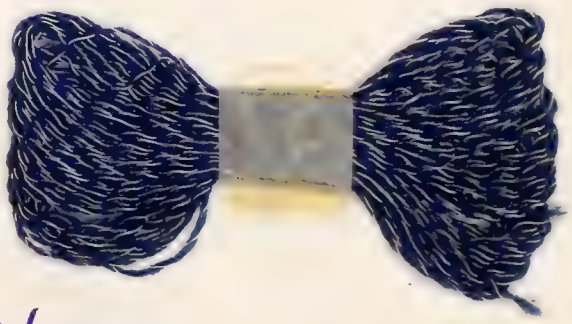
Lecture 19.

Two-Fold

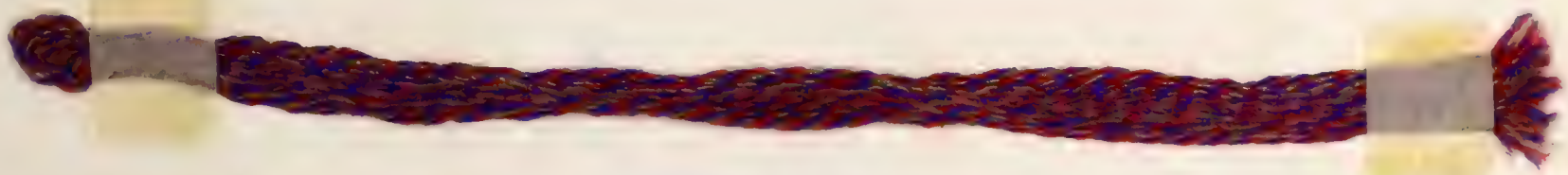


& Three-Fold

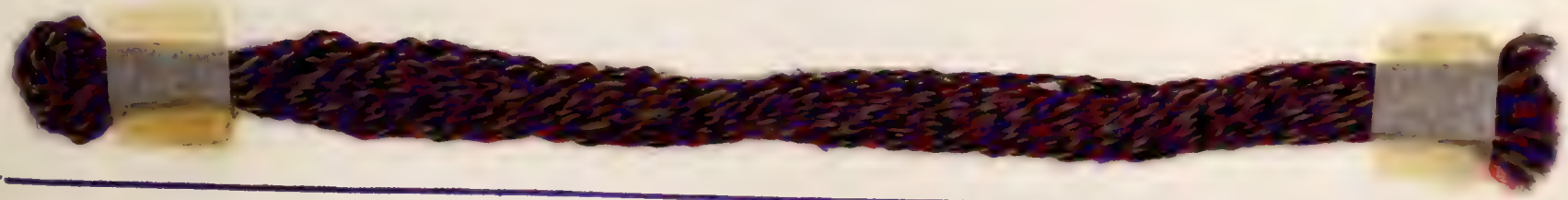




Fancy Twist Yarns.



See Notes.



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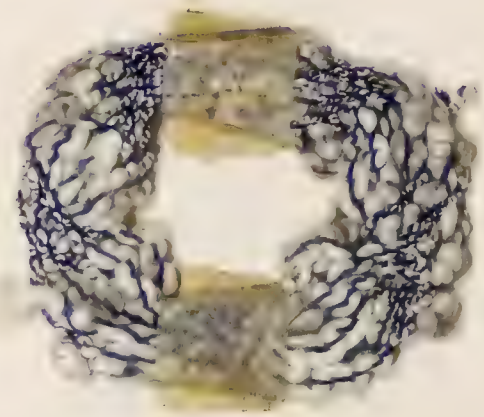
19.

3-Fold Fancy Yarns.

OR



"Corkscrews."

See Notes.

Lecture 19. (Cont.) # Fancy Yarns. (Cont.)

a sliver that has been specially carded + previously dyed the required colours) by using a special sort of clothing etc. which takes up the wool in strips, which become twisted at the delivery end.

IV Nop Yarns. In this yarn, nops or buttons appear here + there on the yarn, the size + distance apart being perfectly under control.

Similar yarns to these are produced on the Woollen Carder by dropping little chopped-up pieces of (often) silk yarn onto the wool as it is cleared off the machine. They are known as "Knicker" yarns.

V Curly Yarns. In these, one of the twist ends forms the loop by standing out from the body of the yarn. The loop may be perfectly controlled to produce a (1) flat, or an all-round (2) pattern, or the loops may be spaced. In the 1st case we have a type usually used, but the 2nd. style makes generally bad, but useful for some special effects.

VI Spiral Yarn. This gives a similar effect in the woven fabric to the loop-yarn mentioned above. The yarn is made from 2 materials (i.e. each in form of yarn) one shrinkable, + other non-shrinkable, twisted together. When wetted one shrinks, + the un-shrinkable yarn loops up. Binding ends, knots, etc. are often twisted into these yarns.

VII Gimp (or Metal) Yarns. In this class is included all those fancy yarns which are of a harsh, hard nature.

VIII Chenille (Fr. - Caterpillar) Yarns, are principally used in the manufacture of Victoria Axminster Carpets + to a very slight extent in extreme dress goods + Opera Cloak Fancies.

Lecture 20. (20) 1913 March 13.

The Modification of Colours by Structure.

Colours in Textiles are influenced by the following influences :-

(1) The physical Structure of the Raw Material.

Silk is the most transparent
Wool is of medium transparency
Cotton (ordinary) is practically opaque & non-lustrous.

(2) Physical Structure of the Yarn.

From the same material very different results may be obtained; thus from the same wool, a non-lustre, or demi-lustre, or lustre effect may be produced, according to the fibre arrangement, i.e. the spinning process gone through.
Woollen = non-lustrous. Wo. Cap (or Ring) = Demi-lustrous, & Flyer : lustrous

(3) Construction of the Fabric

Colours are modified very easily & with much success by the interlacing of Wp. & Wf. The Weave has a most marked influence upon the brightness of the fabric, by reason of the direct reflection or dispersion of the light which falls upon the fabric, according to the floats etc.. For an example take 2 cloths made of silk, one woven with a Sateen weave, & the other with a crêpe weave. The 1st would give the most lustre possible, whilst the 2nd cloth would be very dull. In plushes, cut pile is dull, whilst uncut pile does not absorb the light half as much, is comparatively lustre giving.

4. The Effect of Finish on the Fabric.

When pieces are required to be very lustrous, the finishing operations should be directed towards :—

(a) In the Case of Woollen cloths, obtaining a dense regular pile on the surface of the cloth.

(b) Laying this pile in one definite direction so that the fibres are parallel & consequently reflect the light intact.

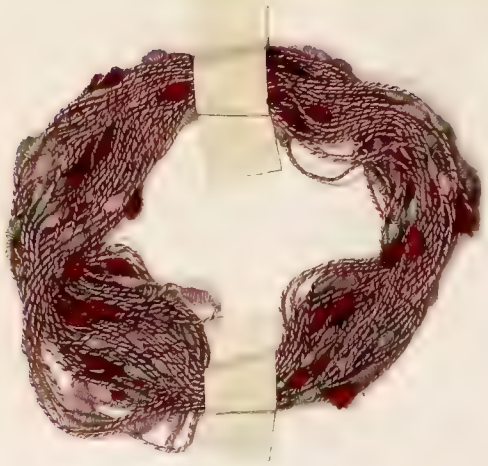
(c) In the Case of Worsted cloths, the fibres are already ||, & care should :. be taken not to disturb this, the

Lecture 19.

A.B.& C. = Fancy Cloud Yarns.

D. = 3Fold Shaded Yarn, in Black, Grey & White.

See Noted



Lect.
19.

KNOT YARNS.

See
Notes.

required arrangement.
When dull, opaque effects are wanted, the finish must be directed to prevent ||-ism of the fibres, as specially noted in the "Scotch" finish. Any stage between these 2 extremes may be attained by the different methods of finishing.

As illustrating the importance of the foregoing notes, the selection of shades for Wollens + Worsteds may be cited.
For Woollens much brighter colours may be selected as compared with the 70's even, if the fabrics are req'd for the same purpose.

Lecture 21. Balancing Colourings in Loom. April 4.

Arranging a wp. in a loom to give an equal colour pattern between the lists, & ∴ balance the piece + add thereby to its appearance + value.

Warps Plan.

4. Mds. 2/60 White Botty (or Grey) 18's reed 4's
✱ 4 " " Blk. "
8. 40/2 fold White Silk (or Grey) 66" wide in loom
⊕ 4. Mds Blk. Botty (2/60)
4. " 2/60 Wh. Body. (or Grey) 40 yds long.
8. " Blk. Silk
32 Mds. in Rept.

66 × 72 : 4752 ends in wp.
4752 ÷ 32 : 148 repts. of Patt. across piece, + 16 Mds.

∴ to give a balanced piece within lists, the warper must start at ✱ + finish at ⊕, giving 148 repts + 16 Mds

Lecture 21 (Cont.) Schemes of Grading.—

Where a graded set of patterns are wanted in ½" stripes, say, & in 2 colours, there are 3 methods to choose from, as regards the grading, viz:-

(1) { Colour A — Dark to light >>
" B — " " " >> }

(2) { " A — " " " >>
" B — Light to Dark << }

(3) { " A — Dark to Light >
" B — not graded. (fixed) }

The above methods will be found worked out on a mounting sheet

The Colouring of Colour & Weave Styles.

The following are the best known examples:—

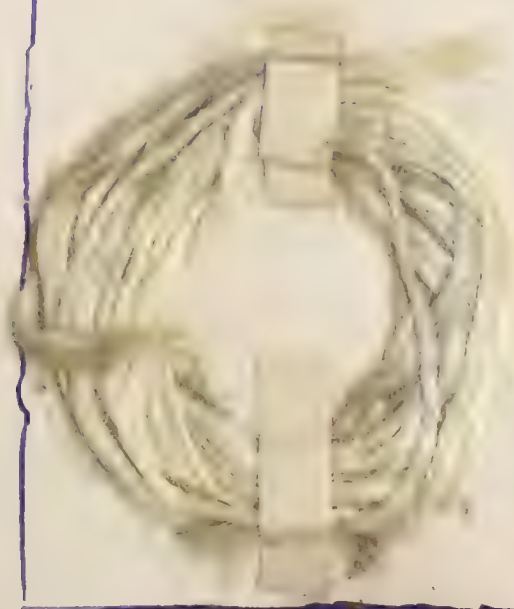
Example.	Weave.	Warp.	Weft.
1.	plain.	1dk. 1et.	(a) Solid, gives bird's eye pattern (b) as wp., gives horizontal or Vertical Hairlines. (c) as wp. but colours slightly different, very interesting mixture effects, between bird's eye & hairline styles, are produced.
2.	⅔ twill.	1dk. 1et.	(a) Solid, gives speckled mixture. (b) as wp., " a step pattern. (c) as wp. but slightly diff. colours, an interesting mixture effect may be produced.
3.	"A" (See Mounting Sheet)	1dk. 1et.	(a) Solid — an excellent mixture effect. (b) As wp., mixture or step patt. is made.
4.	"M"	1dk. 1et.	(a) as wp, — hairline-steppattern effect.

LECTURE

19.

KNOP

YARNS

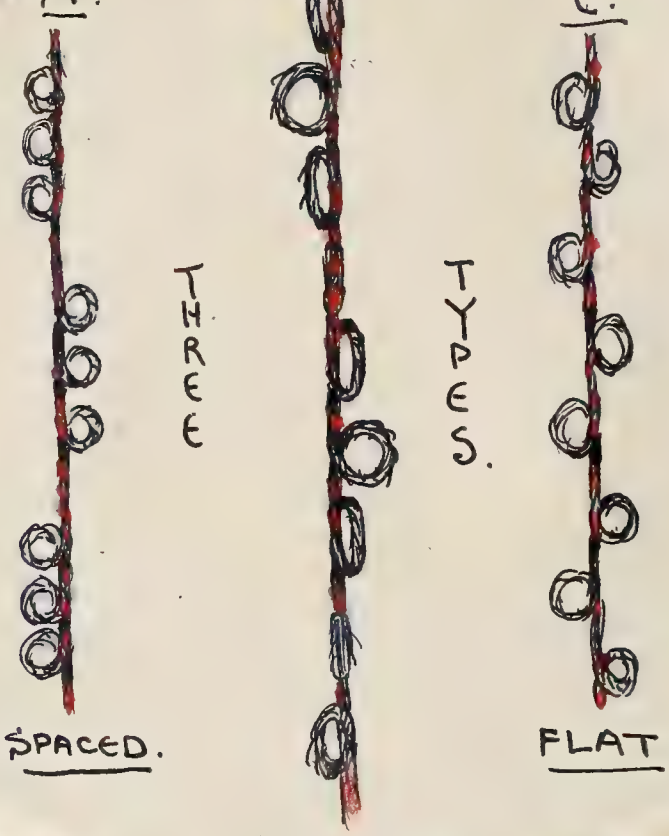


SEE NOTES

LECT. 19.

YARNS.

CROCHET.



See Notes.

Lecture 22. Colouring of C. & W. Effects (Cont.) April 11th

Example.	Weave.	Warp.	Weft.
5.	"M"	1dk. 1lt.	(a) as wp. – gives a fine mixture effect.
6.	"Q"	1dk. 1lt.	(a) as wp. – " " step-pattern " .
7.	2/1 Twill	2dk. 1lt.	(a) ~~solid as wp.~~ – Stripe effect.
			(b) as wp. – pure hairline style (or mixture effect)
			(c) as wp. but in diff. colours & on opposite footing gives a useful mixture.
8.	Plain.	2dk. 2lt.	(a) Solid – mixture effect.
			(b) as wp. – check-Brat style.
			(c) as wp. but with colours slightly different a stripe more or less distinct is made.
9.	2/2 Twill	2dk. 2lt.	(a) solid, – small line effect.
			(b) as wp, broken hair-line.
			(c) as wp, but in diff. colours gives a more or less distinct Stripe.

Lecture 23. Colouring of C. & W. Effects. (Cont.) April 25th.

Example.	Weave.	Warps.	Weft.
10.	"D"	1dk. 1lt.	(a) as wp., gives a neat C. & W. effect, which will lend itself to strong colouring.
11.	3/3 Twill	3dk. 3lt	(a) Solid – useful stripe.
			(b) as wp. – gives a good C. & W. effect.
			(c) as wp. but diff. colours, with change of footing, a useful broken effect is obtained
12.	"B"	4dk. 4lt.	(a) as wp. – gives very useful mixture effect if contrast is not too strong.
13.	"C"	4dk. 4lt.	(a) as wp. – a mixture C. & W. effect is made.
14.	"G"	6dk. 2lt	(a) as wp. – effective Star-pattern is produced.

F.T.O.

Lect. 23 (Cont) — Colouring of C.W. Effects (Cont.)

Example.	Weave.	Warp.	Weft.
15.	"H"	4 dk. 4 lt.	(a) Solid = Star effect produced.
16.	"L"	4 dk. 4 lt.	(a) as wp, gives useful compound effect.

Lecture 24. — Colouring of C.W. Effects. (Cont.) — May 9th

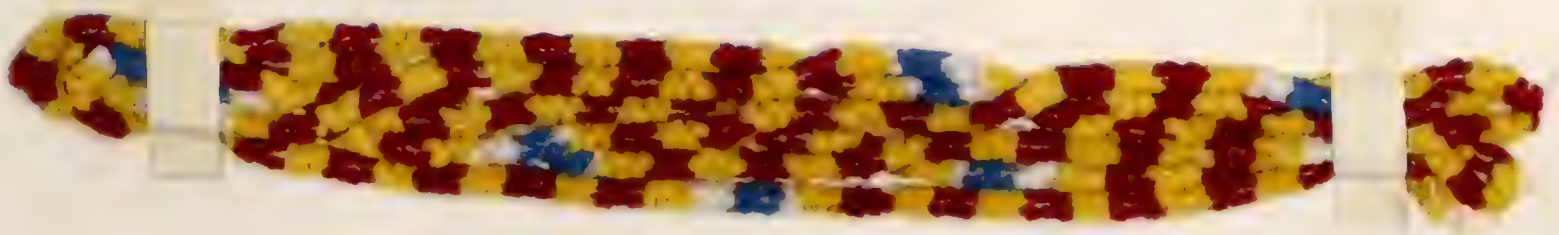
Example.	Weave.	Warp.	Weft.
17.	"E"	2 lt. 6 dk.	(a) as wp. – interesting check pattern.
18.	"K"	6 dk. 6 lt	(a) as wp. – well known Star-pattern is produced.
19.	"S"	6 lt. dk.	(a) as wp - useful check pattern.
20.	"O"	1 dk, 1 mid, 1 lt. = 2{1 dk. 1 mid. 1 lt.} 2{1 lt 1 mid 1 dk}	(a) as wp - gives useful line effect. This colouring for wp. + wf. gives a good "line-check" pattern. See "O".
21.	"I."	1 dk. 1 md. 1 lt.	(a) as wp. gives a useful step-patt. in 3 colours.
22.	plain	1 dk. 1 md. 1 lt.	(a) as wp – a splendid combination for mixture effects results.
23.	3/3 twill.	2 dk. 2 mid. 2 lt.	(a) as wp. useful lightly defined stripe effect.
24.	5/3 twill.	3 dk. 3 md. 3 lt.	(a) as wp. " mixture effect is produced.

CHENILLE

Lecture 19.

FANCY YARNS.

See Notes.



LECTURE

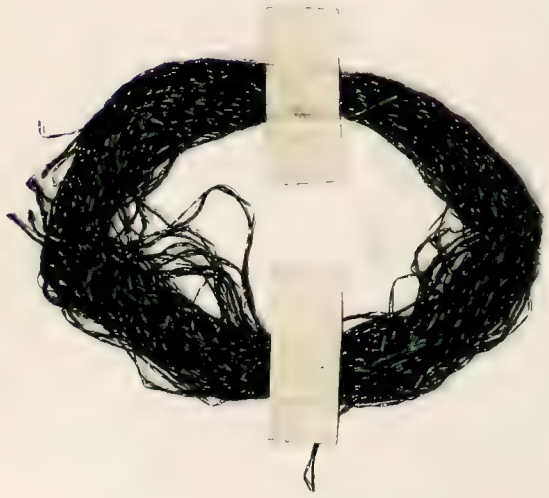
19.

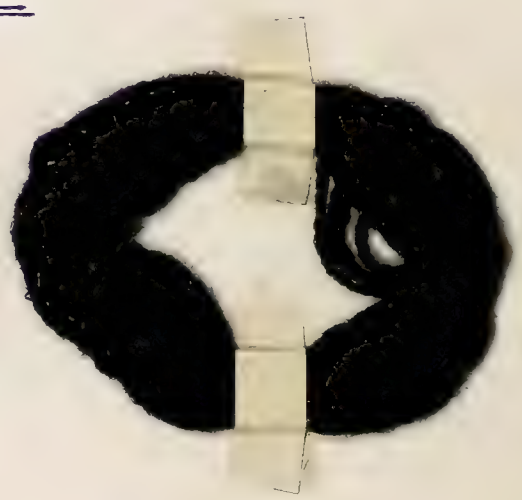
GIMP

OR

TOMSEL

YARNS.





Lecture 25. Colouring C. + W. Effects (Cont.) May 23.

Example.	Weave.	Wp.	Wf.
25	"F"	2 dk. 2 md. 2 dk. 2 lt.	(a) As wp, but 1+1, a pronounced harlene is produced.
26	"I"	3 dk. 2 dk. mid. 2 lt. md. 1 lt.	(a) as wp., gives a broken, shaded check effect.
27.	"J"	4 dk. 2 dk. md. 2 lt. md. 4 lt. 2 lt mid. 2 dk. mid	(a) as wp, gives a useful balanced shaded effect.
28.	"A"	8 dk. 3 lt. 2 dk. 3 lt.	(a) as wp. - gives a good broken, non-shaded check effect.
29.	Plain.	2 md. 2 dk. 2 md. 2 dk 2 lt. 2 dk.	(a) as wp. an interesting net-checking triple results.
30.	Mayo, or "Will Hopsack.	4 dk 4 md. 4 lt. 4 mid.	(a) as wp. - produces a very good effect in 3 Colours.

Lecture 26. June 6.

Coincidence + Non-coincidence between the Colouring + the Weave, in C.+W. Effects.

There may be 5 relations between Colour plans + weaves, as shown below :-

Colouring & Weave.	Example Colour	Example Weave
I. When alike. (both repeat on, say, 2×2).	1dk. 1lt.	1/1 (plain)
II. Colour measure of weave.	1dk. 1lt.	2/2 twill.
III. Weave measure of Colour.	2dk. 2lt.	1/1 (plain)
IV. When both have a common measure.	2dk. 2lt.	3/3 twills.
V. When they have no measure at all.	2dk. 1lt.	3/2 twill.

The above list will be found illustrated on a mounting sheet with examples.

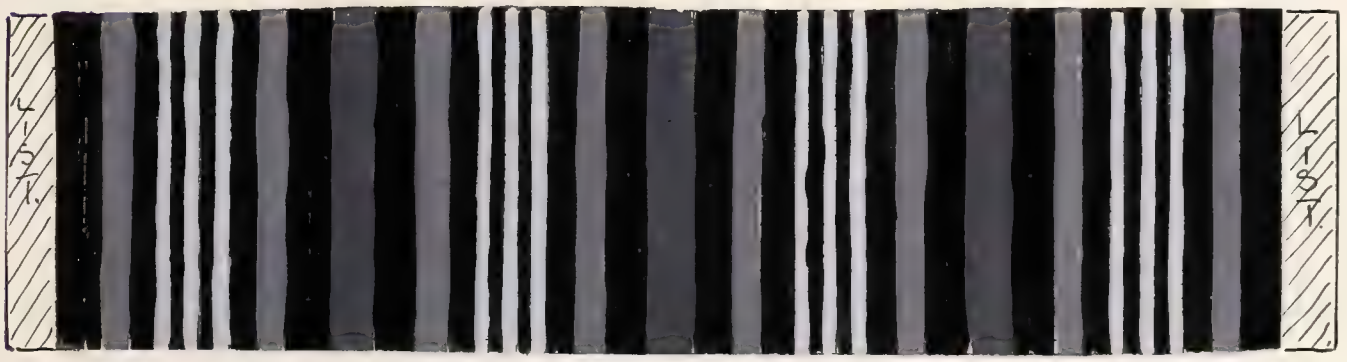
An additional example of Colouring C.+W. Styles (Cont.)

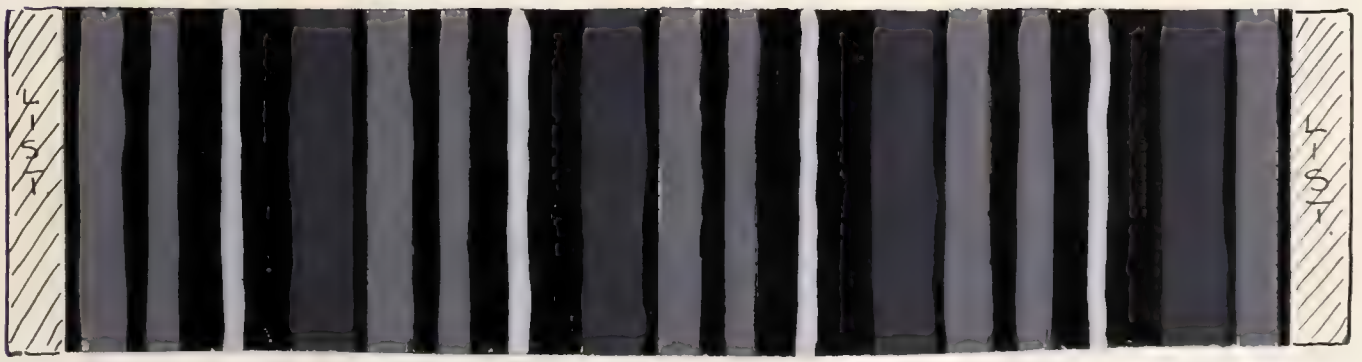
Examp.	Weave	WP	WF
31	"E".	4 mid. 4 lt.	(a) all light — giving a good C.+W. effect.

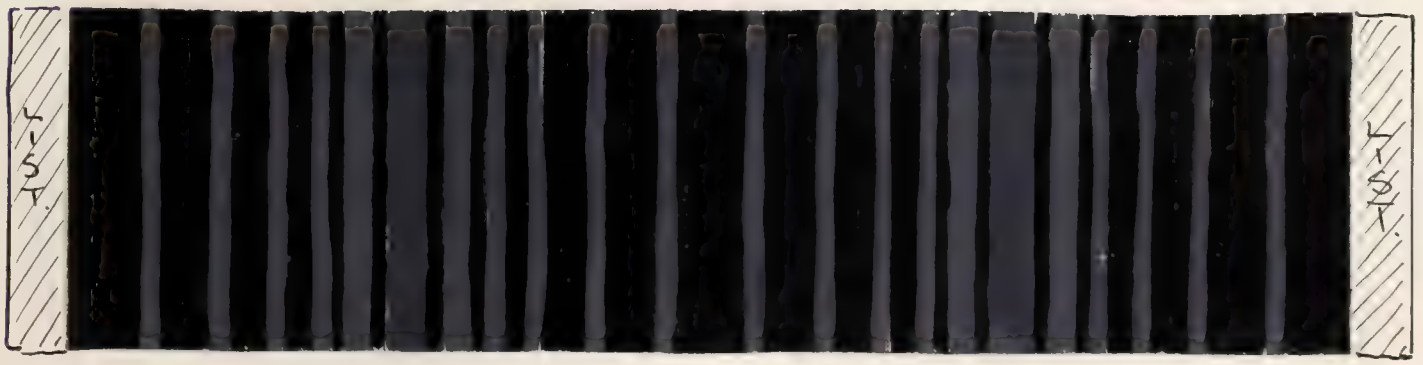
Lecture 21.

The Arrangement of Striped Cloths between the lists, to give a balanced appearance to the fabric.

Example I. (See Notes.)







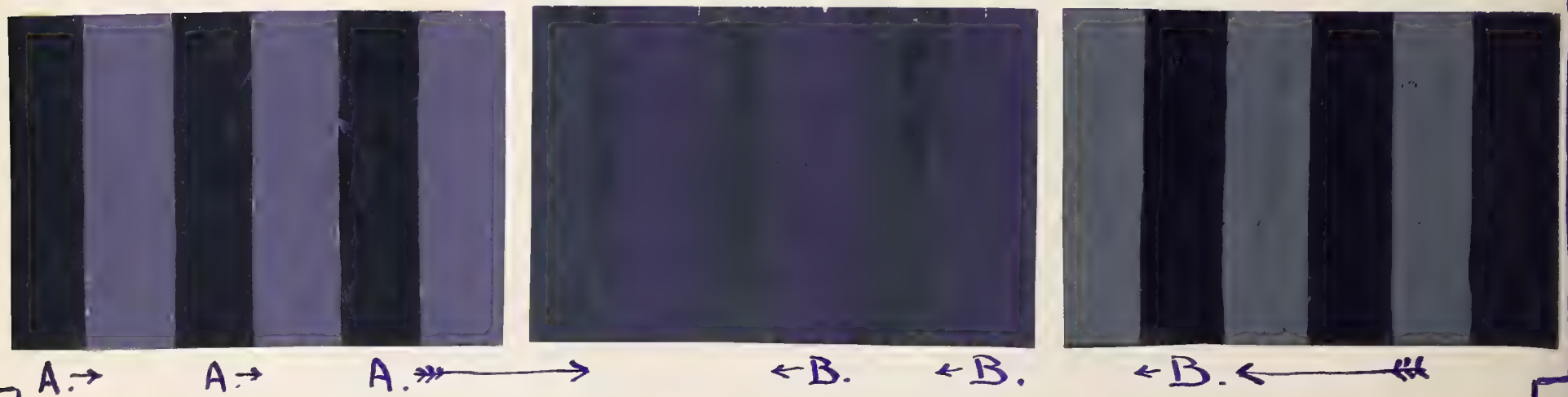
Lecture 21.

3 Schemes of Grading.

Method No. 1.

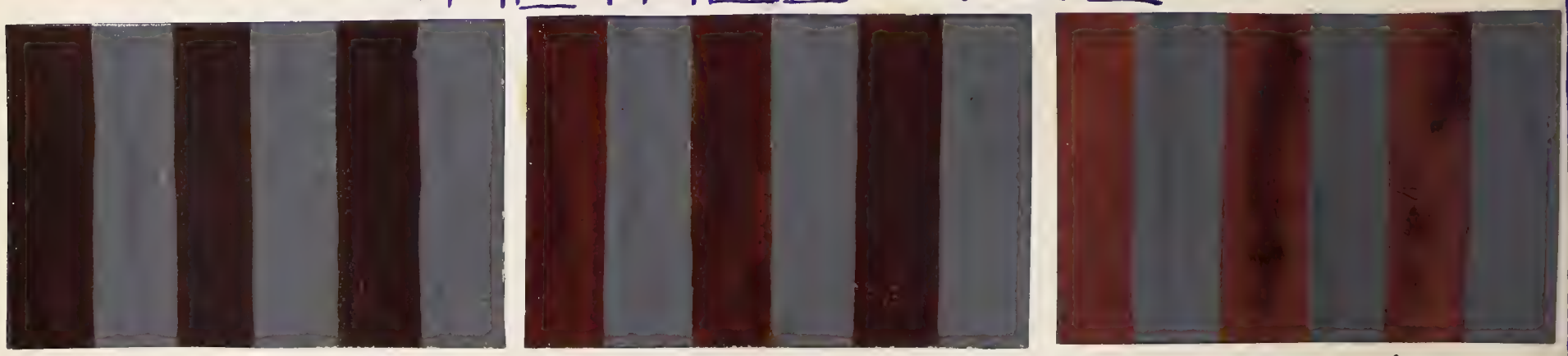
A. → A. → A. ⇝→ B. → B. → B. ⇝→

Method No. II



A. → A. → A. ⇝→ ←B. ←B. ←B. ←⇜

Method No. III



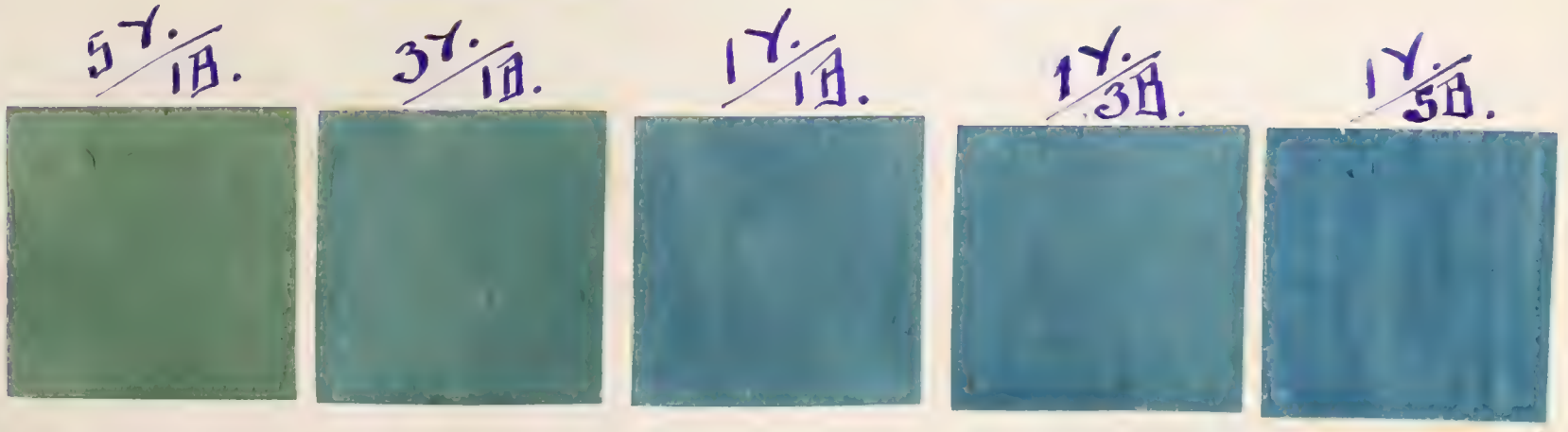
A. → A. → A. ⇝→ B. B. B. (Stationary.)

Lect. 16.

The Designing of Colours.

Red. Example I. Green.

Yellow. Example II. Blue.



LECTURE 21 & ONWARDS.

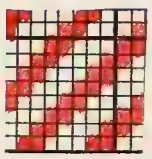
WEAVES FOR C.& W. EFFECTS.

A.

B.

C.

D.

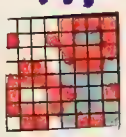


E.

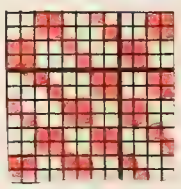
F.

G.

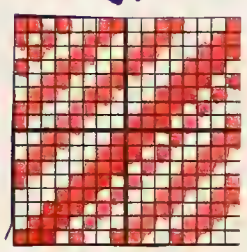
H.



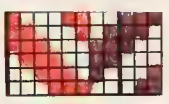
I.



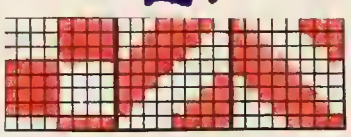
J.



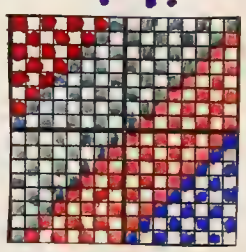
K.



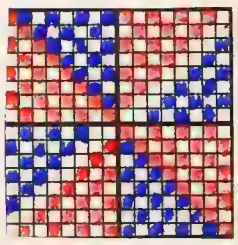
L.



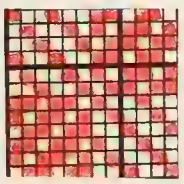
M.



N.

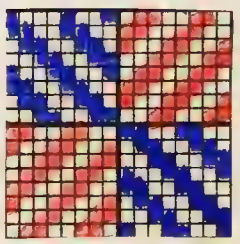


O.

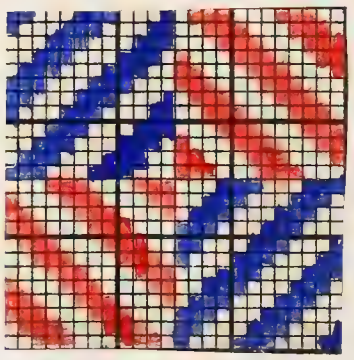


P.

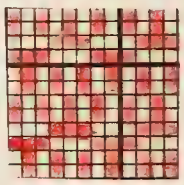
Q.



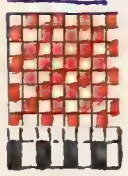
R.



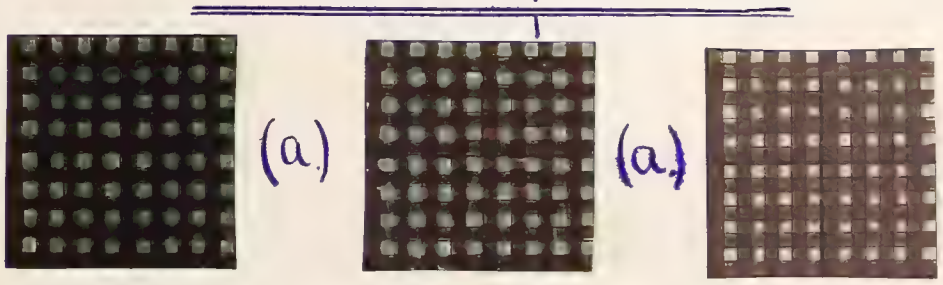
S.



Lecture 21.

Weave.  Plain. & Warp Colouring.

Example I.

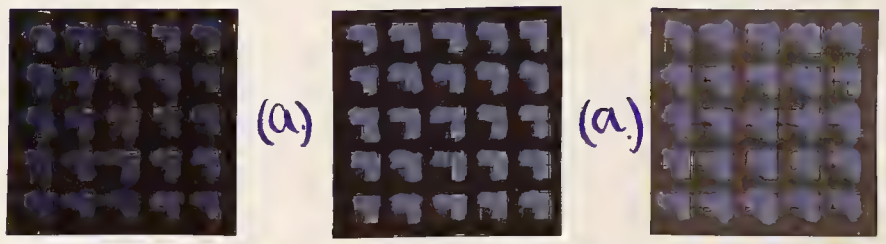


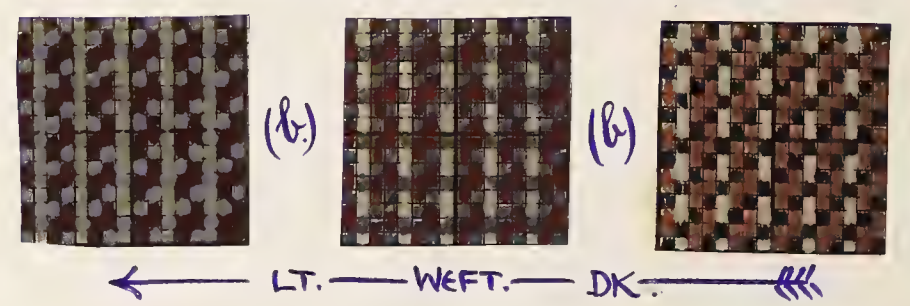
Lecture 21.

2/1 TWILL.

WEAVE & WARP COLOURING.

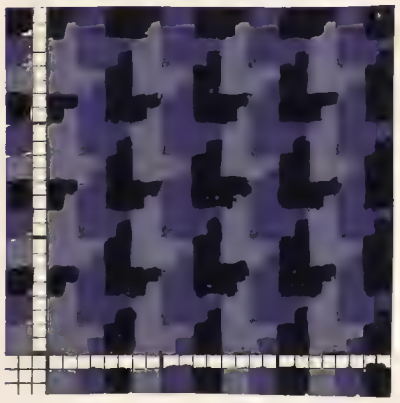
Example 7.



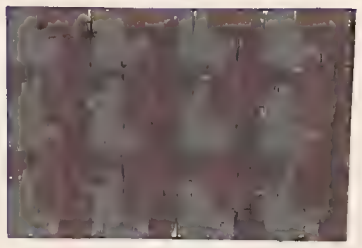


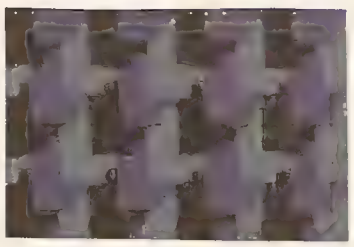
LECT. 24.

THE COLOURING OF



COLOUR & WEAVE EFFECTS.

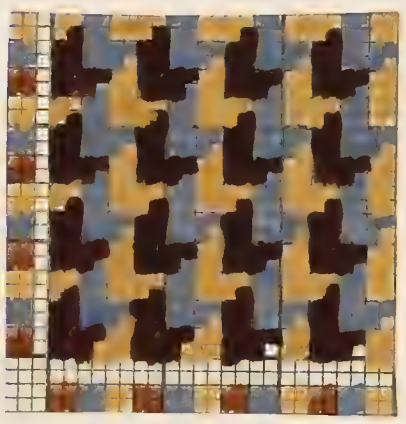


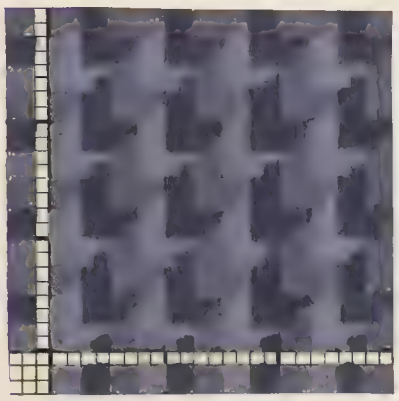


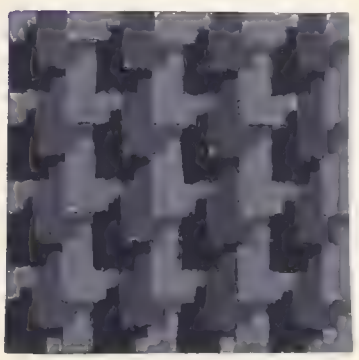
SEE

EXAMPLE.

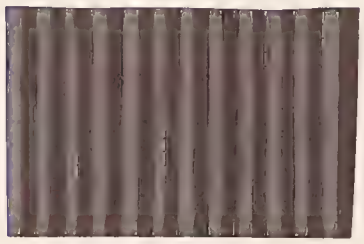
23.



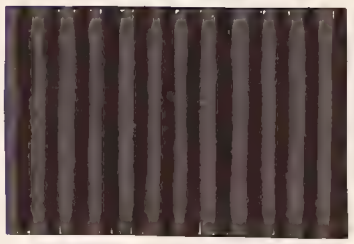




LT. ——— DK.



TYPE I.

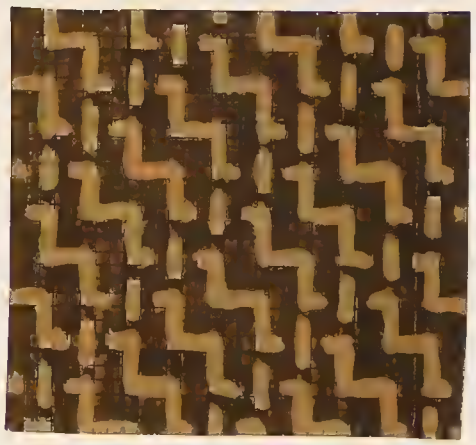


LECT.

26.

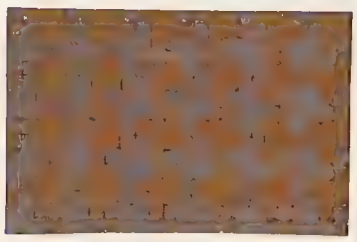
TYPE II.

FIVE TYPES OF

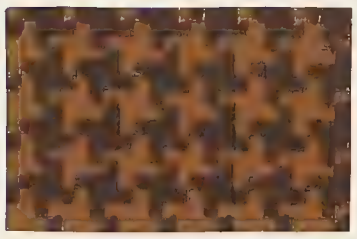


TYPE V.

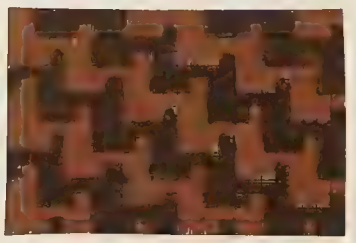
COLOUR & WEAVE EFFECTS.



TYPE III.

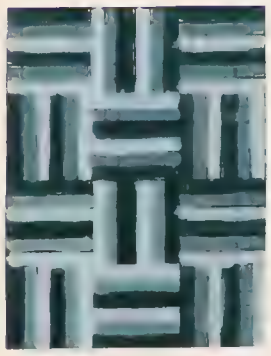


See Notes.



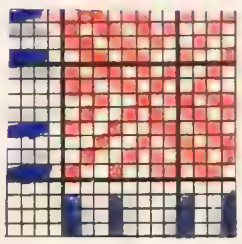
TYPE IV.

EFFECT.



LECT. 24.

WEAVE.

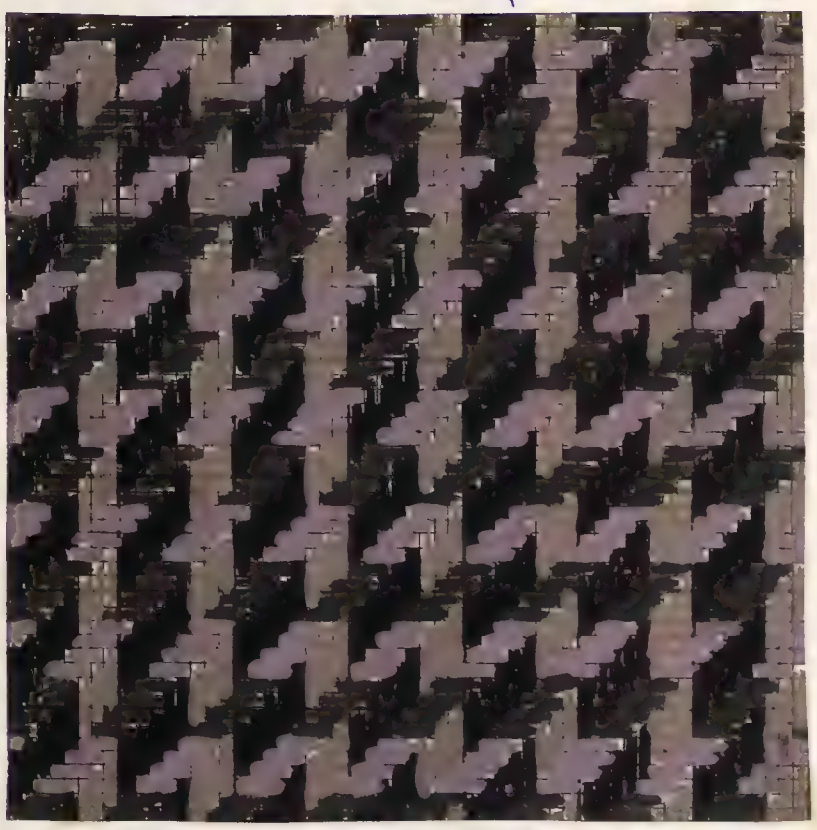


"01".

COLOURING.

LECT. 26.

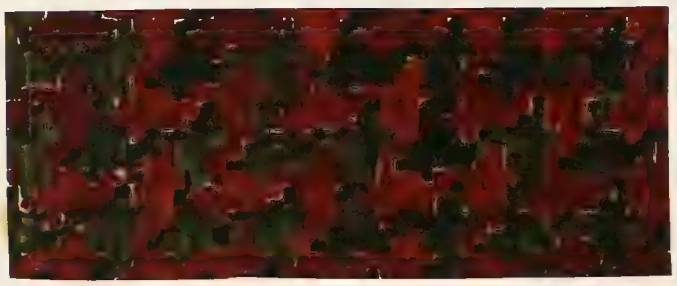
Weave = 4/3 Wp. Twill.



Weft
4 dk.
4 lt.

Warp
5 dark,
3 light.

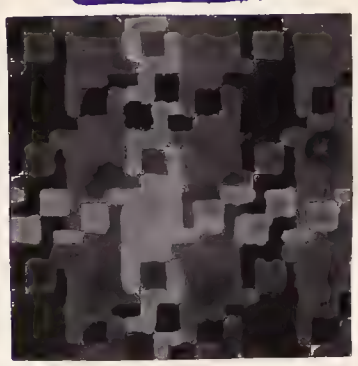
TYPE V



DK.

LT.

Ex. 30.

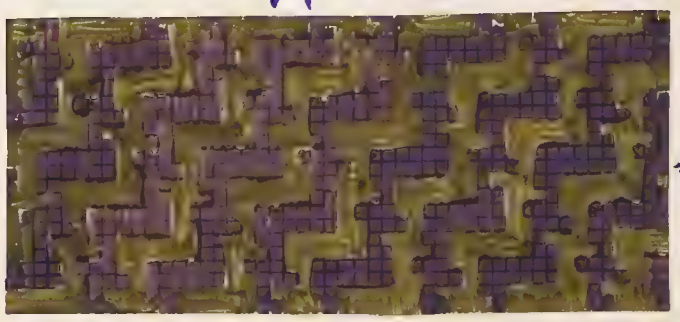


Twill Hopsack.

The Colouring of Colour & Weave Effects.

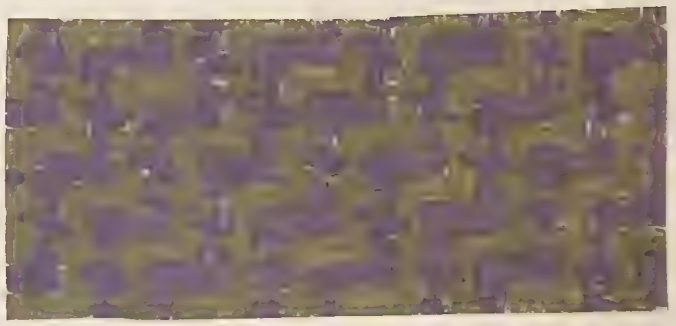
Ex. 30.

St. + St.
+ dark
+ mid.
+ lt.
+ mid.



DK.

LT.

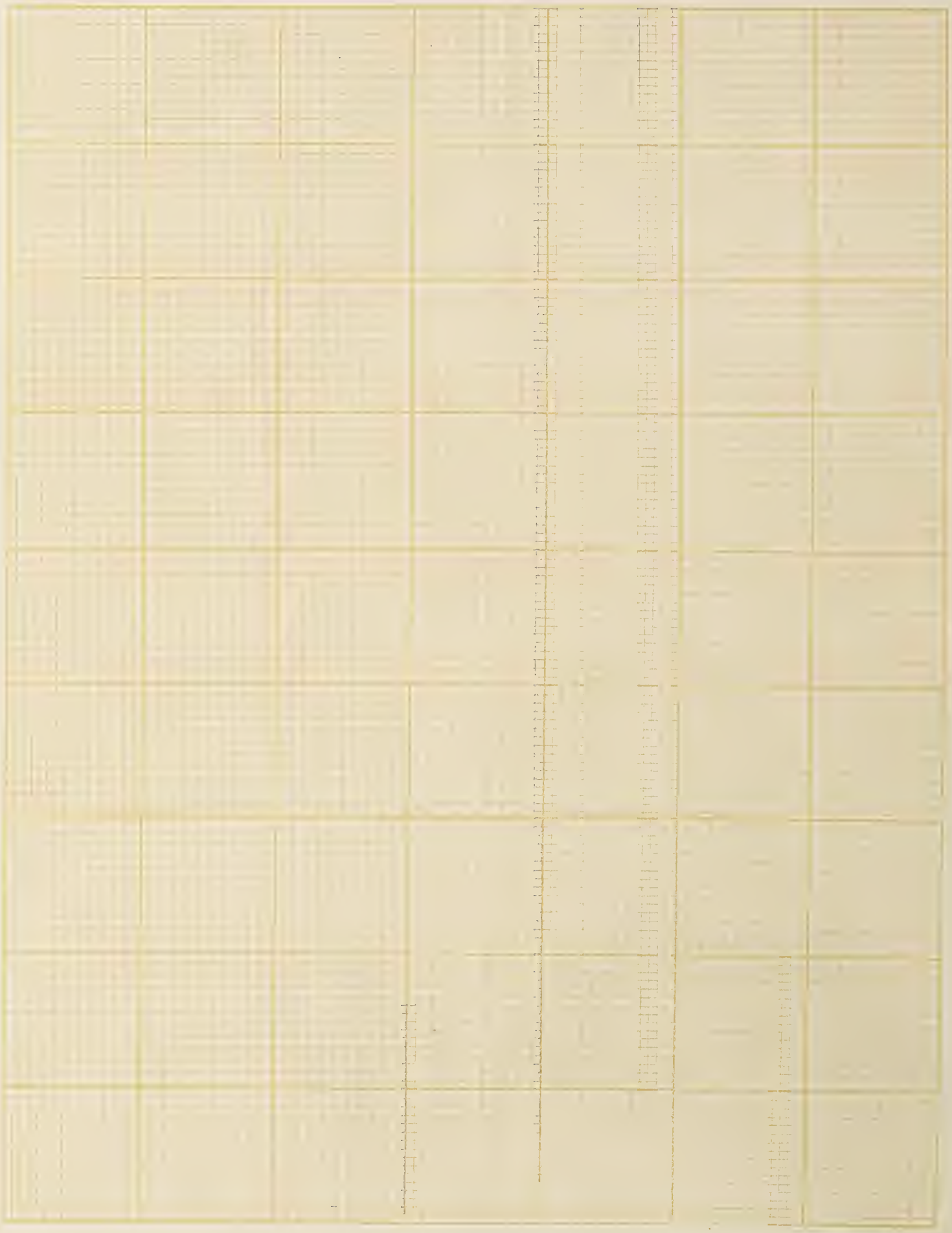


If you keep up to a uniform when this standard you will have a splendid book at the end of the season.

A. T. B.
23/11/1912

Do not add fancy yarns & clutter not your own. Some good work but not sufficient of it.

A.T.B.
27/6/1913



City of Bradford Technical College.

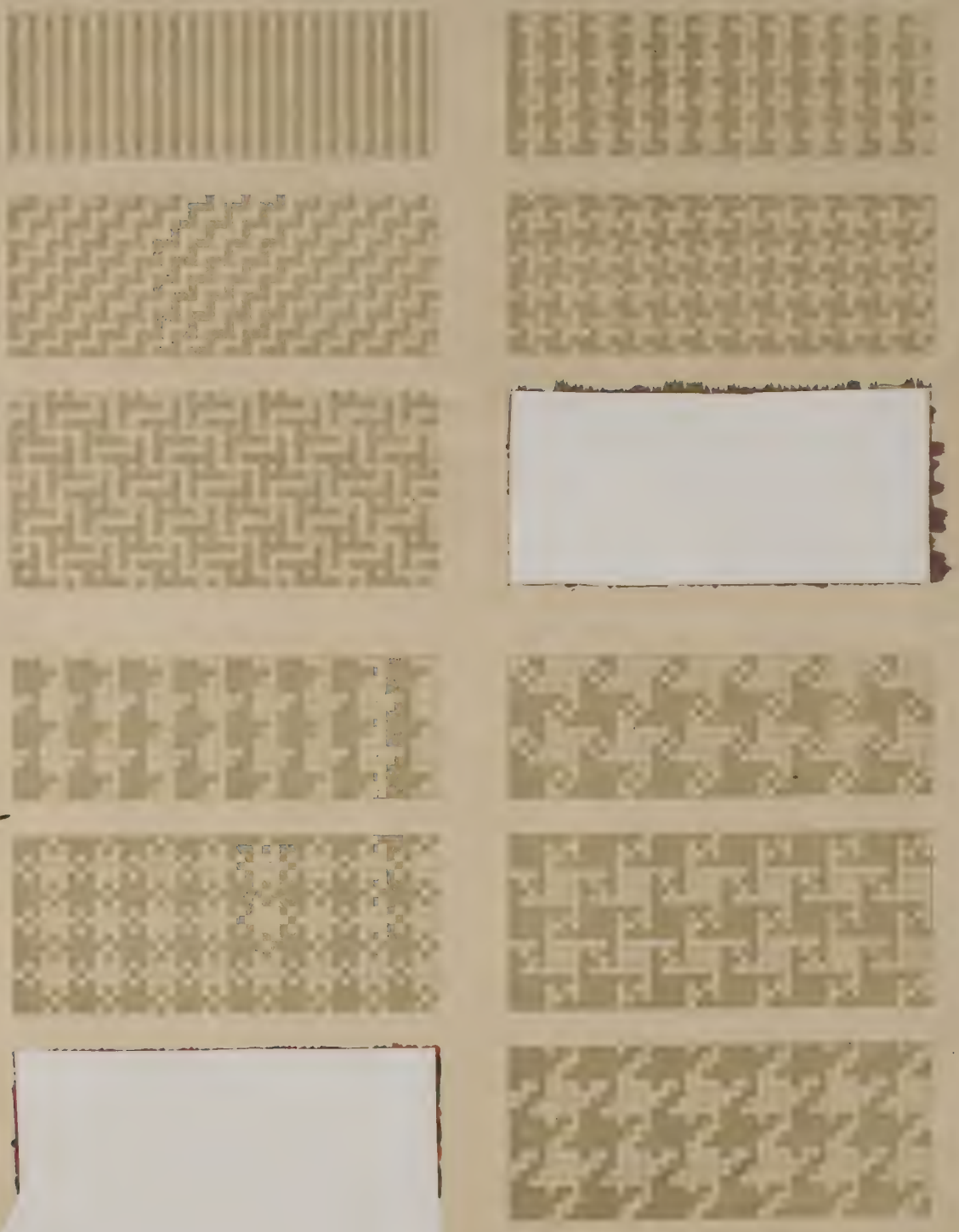
DEPARTMENT OF TEXTILE INDUSTRIES.

COLOUR SHEET No. 7.

City of Bradford Technical College

DEPARTMENT OF TEXTILE INDUSTRIES

COLOUR SHEET



Woven modified by Structure.

- Rare "Marked."
- Net structure
- Cloth "
- Imitation cloth (Satin + twill + mu cut)

Design - effect & scale. 2 co[illegible].

1. The actual scale on which [illegible]
2 " " " to press or co[illegible] appearance
design scale on paper.
When set to given w[illegible] this pos[illegible], scale is apparent
3 Scale 1:1 = size of pa[illegible] result.
4. When reducing work through reducing [illegible]

Mixing & Grey. 15 7 3 1 1 1 1
1 1 1 1 3 7 15

Mixing [illegible] Tweed [illegible] - here. [illegible]
Grey [illegible] for [illegible] (with 2G. 3CK) + Las
distance appears to [illegible] place of BK [illegible]

Gradation [illegible]

Print Extent of surface given to each [illegible]
should be [illegible] ated to a [illegible] T of
co[illegible] to [illegible]
- small surface, strong [illegible]
large " " [illegible]

Colour & [illegible] to be [illegible]
[illegible] - of good [illegible]

[illegible] [illegible] [illegible] [illegible] [illegible] [illegible] contrast or
[illegible] in colour & [illegible]

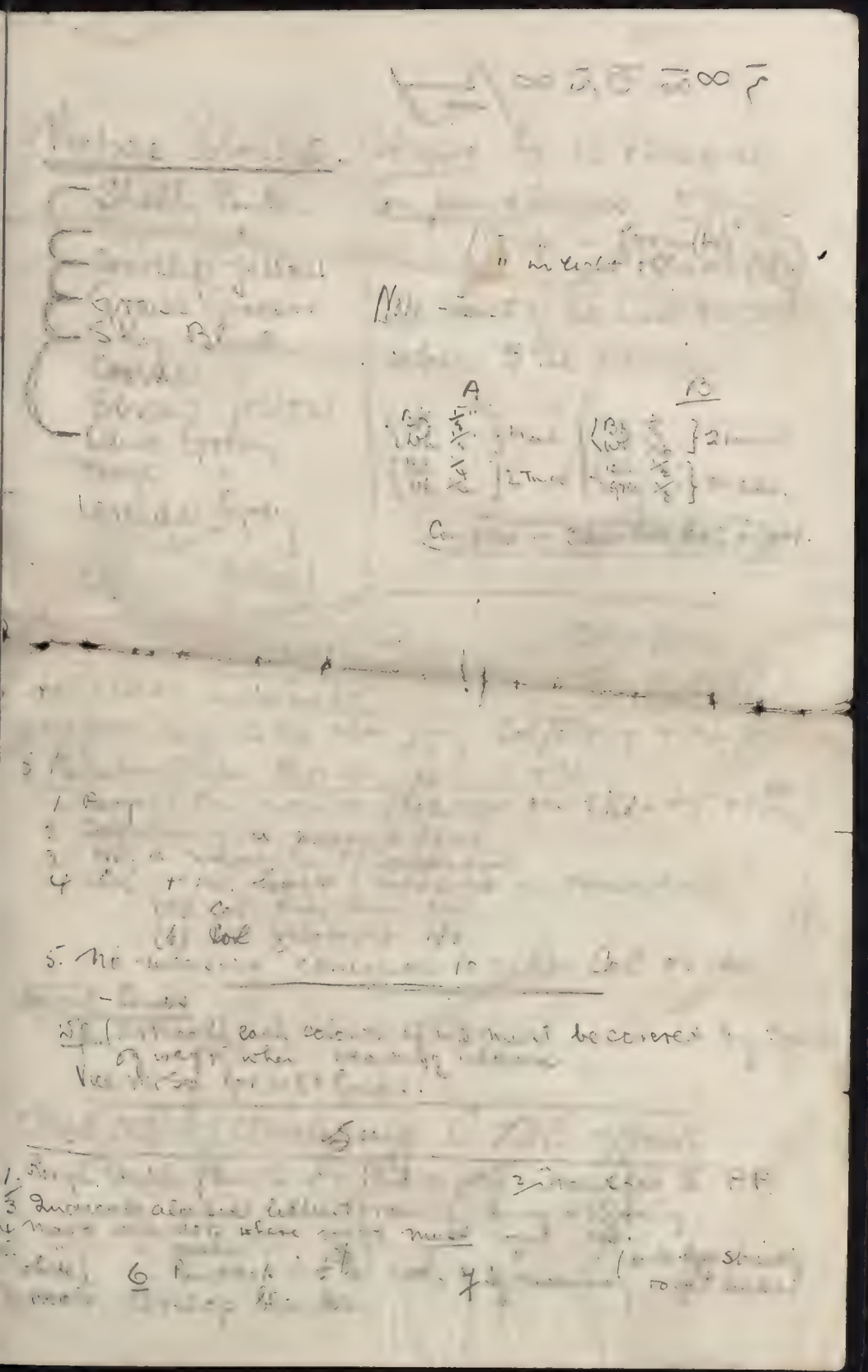
Blending Point of Rest (White and [illegible]
[illegible] (Dark)

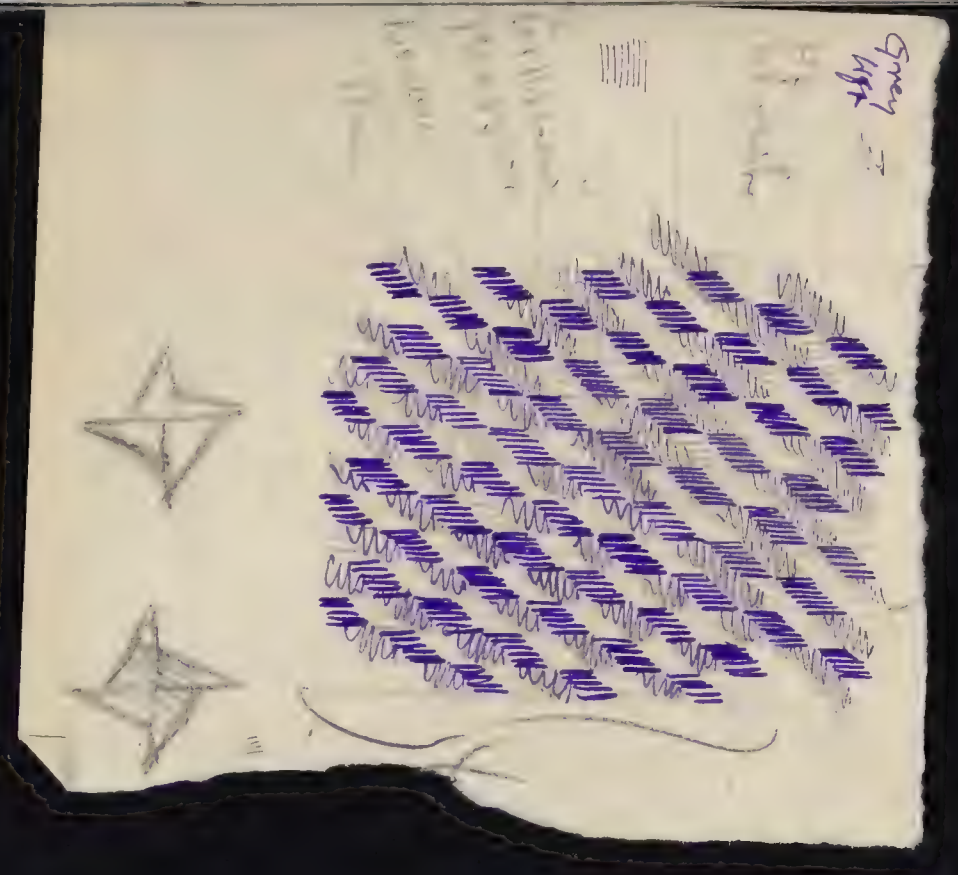
Dyeing

Effect - Economy - Manipulation.
wool - twist - yarn - piece - Cross - mixed - Chlorine
- reserve - mixtures

Fancy Yarns.

Spun, Fine, Cloud, knop, loop, jump, printed
Dyed - Hank
Spiral [illegible] to give - (copper) Chenille [illegible]





Historic Design

Saracenic Ornament.

500 AD. — Byzantium - Chief Textile centre.
Great centre of Christian Art - Eastern
East West
[illegible]
centre
Saracenic Ornament. } bold Character — arose gradually
on [illegible]
forms similar to Rhodian — Epigraphic —
Ornamental letters + Texts from the Koran
Fine Silk woven richly
Designs
Tendency
[illegible]
1000 of conflict
period has been lost to us
etc.

Italian Fabrics.

1300 — 1700 AD.

Chief centre of trade (Mediterranean) about
Mediterranean. From 1000 to 1400
important trade in Textiles —
Eastern Spain + Venice. Styles vary
in Character + Construction with
Flowers + Foliage, Forms placed in vertical
forms + Characters. Use of Arabic
Symbols. From 1400, Renaissance
reached Germany, France
Netherlands + Flanders, but Style +
treatment etc imported from Italy
+ was modified by [illegible]

Colours

1660 to 1715

1715 to 1774

1774 to 1795.

1795 to 1815

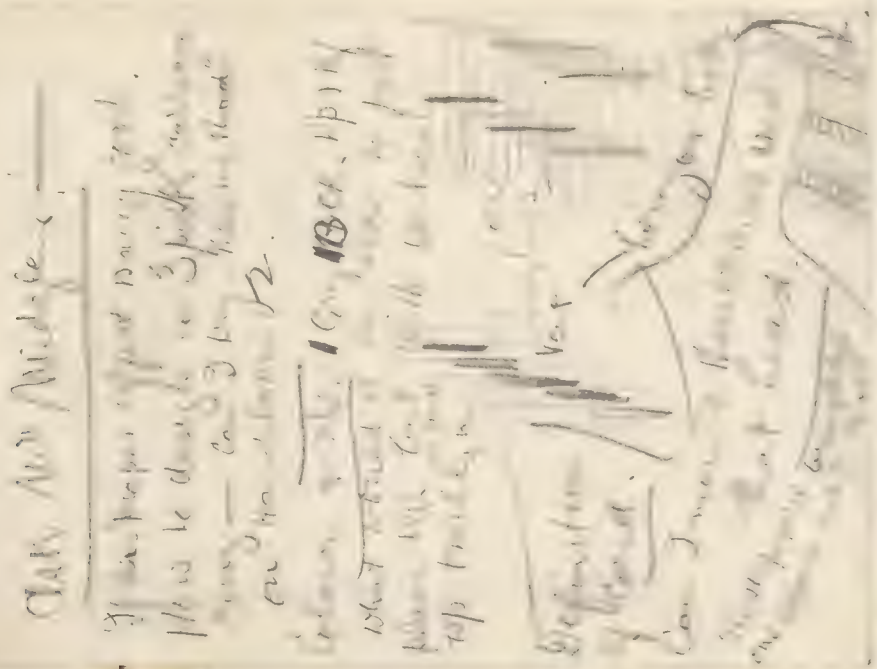
Colour Lecture — Mr Stevenson

Pigments are not actual colour but have only the power of reflecting Colour.
There are 2 powers of contrast, contrast of tone + contrast of hue.
Each particular colour has the power of contrasting with one other colour more definitely than with the remaining colours. These arrangements are called complimentary colours + may be ascertained by reference to the chromatic circle, in which the colours of the spectrum are arranged in their complementary order.

Examples.

Blue is the complementary of Yellow + vice versa
Red is " " " Green + V.V.

When 2 colours are placed side by side the effect of contrast is such that each colour appears of a different hue than if surrounded by white paper.
The effect caused by such contrast is termed simultaneous contrast.
All colours are good colours when suitably used for the right purposes, + when arranged with the right degree of contrast, one with another.



Mr Stephenson's

Colour

Lecture

1.

Feb 20. '13.

Colour Lecture (II)

W. Johnston

In trying to harmonise 2 colours, one of them must be more returning than the other, as to how much it must be more returning would depend upon the purpose the material is intended for.

There are 2 kinds of Harmony

(1) Harmonies of Analogy are composed of colours which are closely allied in the Chromatic Scale. More and more particular by Printable for the more complex forms of colour

(1) Harmonies of contrast are composed of colours which are further removed in the Chromatic Scale.

Chromatic

In either of the above forms of harmony the effect of contrast can be heightened or softened by the addition of other tones (or shades)

of a contrast of tone.

Mylord

Vat Amer as
Lectures 10 & 11.
Dec 13 1920.

Mr Shepherd's

Colour Lecture

I. & II.

KUHLER

Mr Shepherd's
Lectures

B649. 500.

T. V. Staub.

City of Bradford Technical College.

DEPARTMENT OF TEXTILE INDUSTRIES.

Power Loom No. 13 *Date on Loom* ..... *Date off Loom* .....

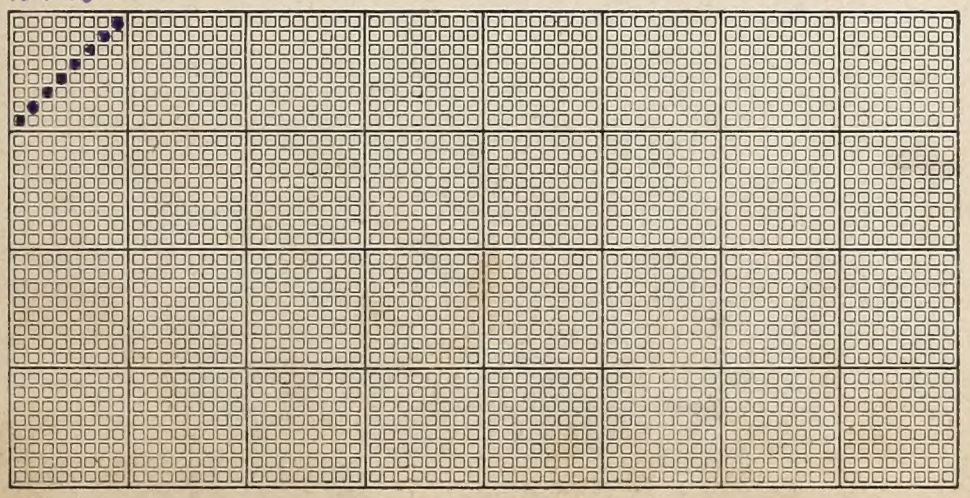
WARP.	WEFT.
Counts & Quality 2/60's Botany 40/2 Salt (Spun) & Fancy Yarn (for figuring) Cotton	Counts and Quality 2/60's Botany. R Twist
32's Reed 4 (See sley plan)	Picks per inch 64

SCHEME.

Bradford Set. 81·9's

to 288 ends.

DRAFT



T.V. Stands

Date made out May 1st '13 Warp No.

Power Loom No. 13 Piece No.

Style of Fabric Fancy Crammed stripe Weight per yard

WARPING AND DRESSING PARTICULARS.

Counts and Quality 2/60's Botty-ground (L+R twist), Fancy yn for Fig 40/2 Sp. Silk- narrow stripes.

No. of Ends in Warp 2816 giving 91 ends per inch. in Loom

No. of Slats 288 Lists (4 ends each side 1 Weaving as one) Sized

No. of inches wide. Loom 30 3/4" within Lists Grey Finished

No. of yards long. Loom ~~50~~ Grey Finished

No. of Sections 2 Ends per Section ~~1408~~ 2816 Beams 2

DYEING AND FINISHING PARTICULARS.

Dye to Shades given. ?

Weight of Piece. Grey Finished

SCHEME.

See Foolscap.

tm